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EPA

Green Lights ProjectKalc for Windows Version 3.00

User's Manual

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List of Figures

1. Getting Started

ProjectKalc assists Green Lights partners in selecting aggressive upgrades that meet the profitability and lighting quality criteria established in the Green Lights Memorandum of Understanding (MOU). It is specifically intended to be simpler to use than the Green Lights Decision Support System (GL/DSS) and more comprehensive than Quikalc. Unlike the GL/DSS, ProjectKalc can be used to assess specific upgrade options selected by the user.

ProjectKalc's basic capabilities can be used to define an existing fixture type and analyze the impact of a potential upgrade fixture and control application. ProjectKalc's more advanced features allow upgrades to be grouped into projects for aggregate analysis. In both cases, ProjectKalc will calculate project costs, energy and demand reduction, energy cost savings, internal rate of return (IRR), life cycle cost (LCC), and net present value (NPV).

ProjectKalc also allows users to add custom fixtures by entering performance information for fixtures not contained in the reference databases, and to transfer data to ReportKalc for progress reporting to EPA.

1.1 Enhancements

Enhancements to this version of ProjectKalc include the following:

1. ProjectKalc is now a Windows-based program. If you are not familiar with Windows 3.x or Windows 95, you may wish to access the Windows on-line help system by pressing [F1]. Alternately, see section 1.7 or section 1.8 for a summary of Windows functionality, or consult your Windows user's manual.
2. The Workscreen has been renamed the WorkZone, and its interface has been redesigned. Many Workscreen functions that were accessed by using the function keys ("F" keys) are now accessed by using tabs on the WorkZone. The Fast Compare and Project Mode options no longer exist. The Upgrade tab and the Cost Summary tab of the WorkZone will allow you to perform the same fast comparisons, however.
3. Browse windows allow you to view and modify building, project, room, fixture, and upgrade information. You can have one or all of the browse windows open on your workspace, and can even open more than one Projects Browse, for instance.
4. Users have additional access to the default values used in ProjectKalc. ProjectKalc defaults are set in two places: the WorkZone; and through the Defaults Selection window, which is accessed via the Defaults menu.

   The changes you make to the defaults on the WorkZone affect only the specified upgrade.

   Changes to the defaults made on the Defaults Selection window can affect all projects *or* only a specified project.
5. On-line help is still available at any time by pressing [F1].

1.2 About Green Lights

Green Lights is a voluntary, non-regulatory program sponsored by the U.S. Environmental Protection Agency (EPA). Its purpose is to encourage major U.S. corporations to install energy-efficient lighting technologies wherever they are profitable and maintain or improve lighting quality.

The underlying principle of the Green Lights program is "environmental protection at a profit." Corporations that make the commitment to Green Lights will profit by lowering their electricity bills, improving lighting quality, and increasing worker productivity. They will also reduce the air pollution caused by electricity generation, which includes carbon dioxide, sulfur dioxide, and nitrogen oxides. EPA launched the Green Lights program to help U.S. companies realize their potential to prevent pollution at a profit by installing energy-efficient lighting designs and technologies.

The energy-efficient lighting technologies available today can dramatically reduce energy consumption and prevent pollution while delivering comparable or better lighting. If energy-efficient lighting were used everywhere it were profitable, the electricity required for lighting would be cut by 50 percent, and aggregate national electricity demand would be reduced by more than 10 percent.

1.3 Computer Requirements

To install ProjectKalc, you need a Windows-based personal computer (PC) with a minimum of the following:

- 386 or higher central processing unit (CPU)
- Hard disk with 10 megabytes of free space available
- 8 megabytes of random access memory (RAM)
- Windows version 3.1 or higher, Windows NT, or Windows 95
- VGA monitor
- Mouse

ProjectKalc's performance will improve significantly if you use:

- 486 or higher CPU
- Hard disk with 10 megabytes of free space available
- 12 megabytes *or more* of RAM. Additional RAM will further improve ProjectKalc's performance

ProjectKalc can be installed on a workstation or on a local area network (LAN).

1.4 Installing ProjectKalc

ProjectKalc for Windows is contained on high-density 3.5" diskettes. If your computer requires a different diskette format, contact the Green Lights Software Support Hotline at the toll-free number listed in section 7.4 for diskettes and installation instructions.

The following installation instructions assume that you are installing ProjectKalc onto hard drive C from floppy disk drive A. If you are installing it to or from another drive, you must substitute all references to C:\ or A:\ with the appropriate drive letter. The use of the symbol [Enter] indicates that you should press the Enter key.

ProjectKalc for Windows must be installed from the Windows operating system, in the Windows 3.x Program Manager window, or from the Windows 95 desktop. Perform the following steps:

1. Insert the ProjectKalc Installation Disk #1 into floppy disk drive A.
2. Windows 3.x users should click on the File menu, then click on Run. Windows 95 users should click on the Start button, then click on Run.
3. A dialog box with a data entry box for a command line will appear. In the data entry box, type the following:

   A:SETUP
4. Click on the OK button in the dialog box. An introductory window will be displayed. Please read this window, then select the Next button to continue.
5. The ProjectKalc Installation dialog box will display the directory where ProjectKalc will be installed. The default directory is C:\PKWIN. Select the Next button if you wish to continue with the installation. If you wish to install to a different directory or location, select the Browse button. Type or select the drive and directory that you prefer, then select the OK button. If the selected directory does not already exist, you will be asked whether you want it to be created. Select the Yes button to continue, or the No button to select a different directory. Select the Next button to begin the installation process. If you decide to halt the installation, select the Cancel button. You will exit the installation program, and ProjectKalc will not be installed on your system.
6. You will be prompted to remove ProjectKalc Installation Disk #1 from the floppy disk drive and to insert ProjectKalc Installation Disk #2 into the floppy disk drive. Change diskettes and select the OK button. Repeat this process when prompted for ProjectKalc Installation Disk #3.
7. A dialog box will appear indicating that ProjectKalc needs to check for previous installations. This dialog box allows you to either continue with the installation process, or to view the README.WRI file for additional information. If you choose to view the README file, you will be able to return directly to the installation process.
8. The installation program will scan all attached drives, *including* network drives, to find existing copies of ProjectKalc data.

If no other ProjectKalc installations are found, the sample data on the installation disks will be loaded into ProjectKalc.

If data from an installed version of ProjectKalc are found, a dialog box will appear that displays the directory(s) where ProjectKalc data were found and notes the version of ProjectKalc used to save the data. Select the Convert Existing Data button to include these data in ProjectKalc for Windows. A listing of directories containing ProjectKalc will be displayed. Click on a directory and click on the Select button.

9. A dialog box will appear confirming that the data files were converted successfully. Click on the OK button. Another dialog box will appear indicating that the installation process is complete. Select the OK button.
10. The installation program creates a program group titled "Green Lights Tools," which has four icons in it: one for ProjectKalc, one for ProjectKalc Help, one for the Read Me First file, and one for Uninstall ProjectKalc.

After ProjectKalc has been installed, you are ready to use the software. Windows 3.1 users should enter ProjectKalc as follows:

1. Enter the Windows Program Manager.
2. Double-click on the Green Lights Tools program group icon to open it.
3. Double-click on the ProjectKalc for Windows icon. The program will launch.

Windows 95 users should enter ProjectKalc as follows:

1. Click on the Start button
2. Move your mouse cursor to the Programs option, then move it to the right. A submenu will appear.
3. Find the Green Lights Tools option on the submenu, then move your mouse cursor to the right. Another submenu will appear.
4. Click on the ProjectKalc for Windows option. The program will launch.

The Green Lights ProjectKalc main window will appear, with an introductory window display. The first time you access ProjectKalc, the program will index data files.

1.5 Installing ProjectKalc on a Local Area Network (LAN)

ProjectKalc for Windows may be used from a local area network (LAN) installation. If your current copy of ProjectKalc is installed on a network drive, or if you wish to install ProjectKalc for Windows on a network directory, you should consult your network system administrator for assistance.

The installation program places most of its files in the directory specified by the user. The default name for this directory is C:\PKWIN. Two of the files required by ProjectKalc-CTL3DV2.DLL and TOOLHELP.DLL-must be located in the drives \Windows\System directory. Although these files are often already present in the \Windows\System directory, the ProjectKalc for Windows installation program ensures that they are present by installing these files. On a LAN, the \Windows\System directory is commonly write-protected in order to prevent deletion of critical files.

ProjectKalc for Windows must be installed from the Windows operating system, in the Windows 3.x Program Manager window, or from the Windows 95 desktop. If you choose to install ProjectKalc for Windows on a network, use the following procedure:

1. Insert the ProjectKalc Installation Disk #1 into floppy disk drive A.
2. Windows 3.x users should click on the File menu, then click on Run. Windows 95 users should click on the Start button, then click on Run.
3. A dialog box with a data entry box for a command line will appear. In the data entry box, type the following:

   A:SETUP
4. Click on the OK button in the dialog box. An introductory window will be displayed. Please read this window, then select the Next button to continue.
5. The ProjectKalc Installation dialog box will display the directory where ProjectKalc will be installed. The default directory is C:\PKWIN. Select the Next button if you wish to continue with the installation. If you wish to install to a different directory or location, select the Browse button. Type or select the drive and directory that you prefer, then select the OK button. If the selected directory does not already exist, you will be asked whether you want it to be created. Select the Yes button to continue, or the No button to select a different directory. Select the Next button to begin the installation process. If you decide to halt the installation, select the Cancel button. You will exit the installation program, and ProjectKalc will not be installed on your system.
6. You will be prompted to remove ProjectKalc Installation Disk #1 from the floppy disk drive and to insert ProjectKalc Installation Disk #2 into the floppy disk drive. Change diskettes and select the OK button. Repeat this process when prompted for ProjectKalc Installation Disk #3.
7. A dialog box will appear indicating that ProjectKalc needs to check for previous installations. This dialog box allows you to either continue with the installation process, or to view the README.WRI file for additional information. If you choose to view the README file, you will be able to return directly to the installation process.
8. The installation program will scan all attached drives, *including* network drives, to find existing copies of ProjectKalc data.

   If no other ProjectKalc installations are found, the sample data on the installation disks will be loaded into ProjectKalc.

If data from an installed version of ProjectKalc are found, a dialog box will appear that displays the directory(s) where ProjectKalc data were found and notes the version of ProjectKalc used to save the data. Select the Convert Existing Data button to include these data in ProjectKalc for Windows. A listing of directories containing ProjectKalc will be displayed. Click on a directory and click on the Select button.

9. A dialog box will appear confirming that the data files were converted successfully. Click on the OK button. Another dialog box will appear indicating that the installation process is complete. Select the OK button.
10. The installation program creates a program group titled "Green Lights Tools," which has four icons in it: one for ProjectKalc, one for ProjectKalc Help, one for the Read Me First file, and one for Uninstall ProjectKalc.
11. Contact your system administrator for assistance with placing the two files onto the network's \Windows\System directory. The files CTL3DV2.DLL and TOOLHELP.DLL are provided in an uncompressed form on ProjectKalc Installation Disk #3. If the files are not already present in the \Windows\System directory for the network, they should be copied from the diskette to the network's \Windows\System directory.

If you encounter problems with installing ProjectKalc for Windows on a LAN, contact your network system administrator, or the Green Lights Software Support Hotline at the telephone number listed in section 7.4.

Note: ProjectKalc for Windows is *not* specifically designed to support multiple users simultaneously. It may *appear* to operate correctly in this situation, but problems could occur. It is recommended that if you install ProjectKalc for Windows on a LAN, the users should coordinate their use of the system to avoid simultaneous data entry.

1.6 Using On-Line Help

The ProjectKalc help system can be accessed in several different ways, depending on where you are in the system and what type of help you would like to receive. To access help, you could use any of the following methods:

- Click on the Help menu on the ProjectKalc menu bar, then click on the Contents option.
- Click on the  button on the toolbar.
- Press [F1] to display general help about the current window.
- Press [Shift+F1] to display specific help about a text box or other item on the current window.

The help system uses a key symbol () to mark concepts that are key to ProjectKalc.

Windows help uses *hypertext links* to let you jump from one topic to another. These links may be connected to text, or to icons. The help system text that has a hypertext link appears green and underlined. To use the hypertext link, place your cursor over the green underlined text. Notice that when you do this, the cursor changes from an arrow to a pointing hand (☝).Click the left mouse button to move to the "Using ProjectKalc" topic.

Graphics can have hypertext links too. To determine whether an icon has a hypertext link, move the mouse cursor over it. If a hypertext link exists, the mouse will become the pointing hand (☝).

The ProjectKalc help system includes a toolbar which provides users with access to the following options:

Contents	Displays the ProjectKalc Help Contents listing.
Search	Displays a search window, where you can search by key word, or pick a topic from a list of key words.
Back	Displays the last help topic that you viewed. If you have selected multiple windows, this option will take you back one window at a time.
<<	Moves backward through the help file, one topic at a time.
>>	Moves forward through the help file, one topic at a time.

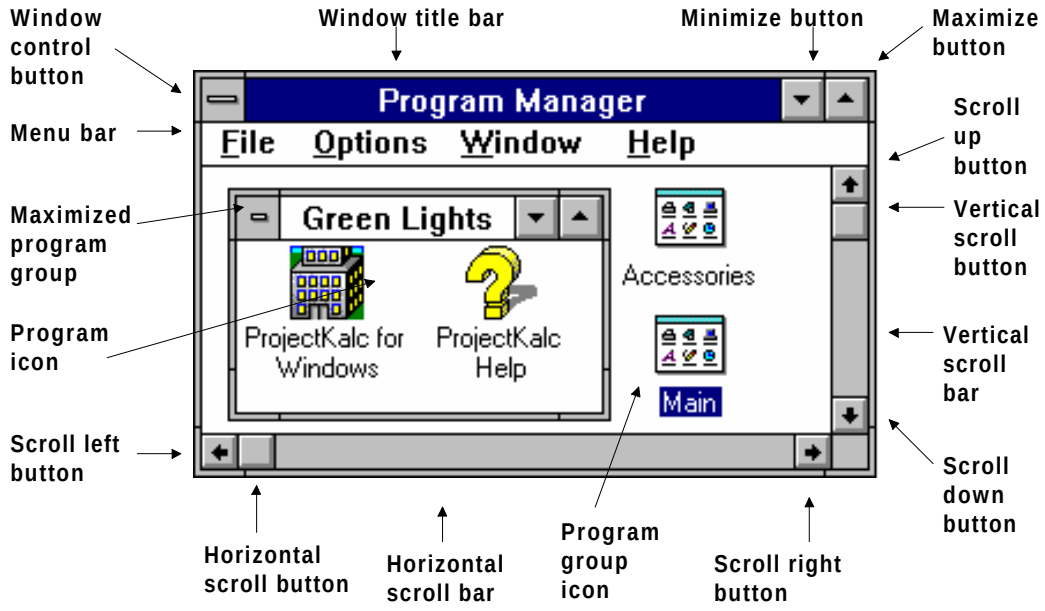
1.7 Notes for Users New to Windows 3.1

This user's guide describes how to install and use ProjectKalc. This section is provided in case you need background in order to get started, but it should not be considered a substitute for Windows documentation or training.

Windows is a graphical user interface developed by the Microsoft Corporation. It allows computer users to use a mouse to click on icons—pictures on the computer screen—and drag them to other locations. Windows makes file management easier, in part because it reduces the potential for errors in naming files or saving files in the wrong place. It allows you to remember your computer projects as objects rather than by file name.

When you enter Windows, the first window you see is the Program Manager (Figure 1-1). This window contains different *program groups*, or collections of applications. The program groups act like subdirectories, or files, to organize your applications. The Program Manager has an on-line help system that can be accessed by pressing [F1].

Figure 1-1. Windows 3.1 Program Manager



Buttons are objects on the computer screen that trigger certain actions when you move the mouse's arrow cursor over them and click with the left mouse button. They are used throughout the Windows Program Manager interface and in the ProjectKalc interface. Buttons to control your windows are located in the corners of the windows.

The window control button in the upper left corner of the window allows you to close, minimize, or restore the window. The buttons in the upper right corner of the window change the size of your windows. One of these buttons in the upper right corner has a downward-pointing triangle on it. Select this button to turn the window into an icon on your desktop. To get your window back, you can click on the icon and select Restore from its menu. Restore appears in a block of color—a *highlight*—that indicates that this is your current selection. When you see an item highlighted, you can select the option from the keyboard by pressing [Enter]. You can also double-click on an icon to make its window appear.

Clicking on the button with the single triangle pointing up will maximize your window so that it fills your computer screen. When your window is maximized, you will see a button with two triangles. If you click on this button, your window will return to its smaller size.

1.8 Notes for Users New to Windows 95

This user's guide describes how to install and use ProjectKalc. This section is provided in case you need background in order to get started, but it should not be considered a substitute for Windows 95 documentation or training.

Windows 95 is the new user interface developed by the Microsoft Corporation. Features offered by Windows 95 are single-click launching of programs; a menu bar at the bottom of the window from which you can access your programs; and access to a program group, much like that found in Windows 3.1.

Windows 95 allows computer users to use a mouse to click on icons—pictures on the computer screen—and drag them to other locations. Windows makes file management easier, in part because it reduces the potential for errors in naming files or saving files in the wrong place. It allows you to remember your computer projects as objects rather than by file name. Long file names allow you to name your files more precisely: instead of calling your project "MEMO325.96", you can now name your file "Memo sent to client, March 25, 1996."

Unlike Windows 3.1, which was a program that ran in addition to DOS, Windows 95 is an operating system and a user interface. When you start your computer, it starts in Windows 95, not in DOS. The Windows 95 *desktop* is shown in Figure 1-2. To start a software application, use one of the following methods:

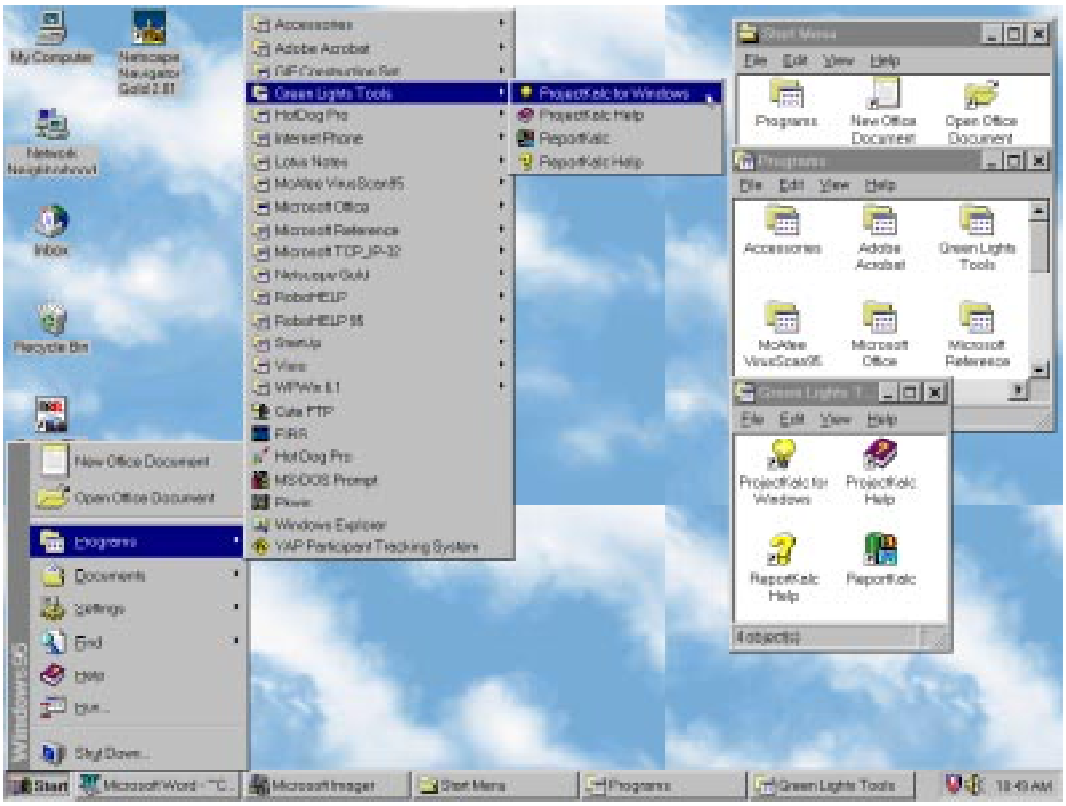
Method 1:

1. Click on the Start button in the lower left corner of the desktop. A menu will appear.
2. Move the mouse cursor to the Programs option, then move it to the right. A submenu will appear.
3. Move the mouse cursor over the Green Lights Tools menu option. A submenu will appear with the words "ProjectKalc for Windows."
4. Click on the submenu option. ProjectKalc will launch.

Method 2 (which may be familiar if you have used Windows 3.1):

1. Using the *right* mouse button, click on the Start button in the lower left corner of the desktop. A menu will appear.
2. Using the *left* mouse button, click on the Open option on the pop-up menu. A program group window, titled Start Menu, will appear. This window contains different *program groups*, or collections of applications. The program groups act like subdirectories, or files, to organize your applications.
3. Using the left mouse button, double-click on the Programs program group icon. The Programs window will appear.
4. Locate the Green Lights Tools program group icon. Using the left mouse button, double-click on it.
5. Using the left mouse button, double-click on the ProjectKalc program icon. ProjectKalc will launch.

Figure 1-2. Windows 95 windows and menu structure



Buttons are objects on the computer screen that trigger certain actions when you move the mouse's arrow cursor over them and click with the left mouse button. They are used throughout the Windows interface and in the ProjectKalc interface. Buttons to control your windows are located in the corners of the windows.

Three window control buttons are located in the right corner of each window. The first button minimizes the window, and places it on the *task bar* with the Start button. To enlarge the window, click on the button on the task bar. The window will enlarge and become active on your desktop. The next button controls the enlarged size of your window. Click on it to make your window expand to fill your desktop, or click on it again to reduce the window to a smaller size. This feature is useful if you have several windows on your desktop. The third button will close the window and end that task, returning you to the previous program or to the Windows 95 desktop.

1.9 Additional Windows Notes

Specialized buttons for moving around are located on the right side and bottom of the window. If you click on the buttons with the up or down arrows, you will move the window's view up or down. This does not, however, affect your cursor's location. To move your cursor, you will need to use your mouse to position the arrow cursor, then click on the left mouse button over the object you wish to select. You can also move up and down the window by using the small,

square button between the two arrow cursors. Position the arrow cursor over the square button, then click and hold down the left mouse button. If you move the mouse up and down, the square button will move up and down, and so will the view in the window. This *scroll bar* is useful for moving all the way to the top or the bottom of a window or document. The arrow keys and small box between them located at the bottom of the window allow you to scroll left and right.

When you enter ProjectKalc, you will see words at the top of the window. These words appear on the *menu bar*. By pointing and clicking with the mouse, you can access different menus, such as File, Edit, Window, and Help. These menus provide much of the functionality in Windows programs.

Windows also allows users to perform multi-tasking: to operate two or more software programs at the same time. You can use a Windows application by using only the mouse to point and click on objects displayed on the computer screen. You can use the keyboard to perform most, but not necessarily all, of the functions that you can perform with the mouse. There are several keyboard shortcuts in Windows. These keystrokes will work in any Windows application:

On-line help:	[F1]
Context-specific help:	[Shift+F1]
Exit Windows:	[Alt+F4]
Active applications:	[Control+Esc]
Switch applications:	[Alt+Tab] (repeat until the application appears)
Previous document:	[Ctrl+F6] (within an application only)
Next document:	[Ctrl+Shift+F6] (within an application only)
Menu bar:	[Alt] or [F10]
Open menu:	[Alt+underlined letter]

For more information on how to use Windows 95, go to the Program Manager window and press [F1] to obtain on-line help, consult your Windows user's manual, or attend a training session.

2. Using ProjectKalc

This section is provided as a quick reference to using ProjectKalc. The remaining chapters of this manual provide additional descriptions of the different windows and their use.

This manual supplements the on-line help system. To access ProjectKalc on-line help, enter ProjectKalc and press [F1], or launch the ProjectKalc Help program from the Windows workspace. For context-specific help within ProjectKalc, press [Shift+F1], then use the cursor to click on the window element.

2.1 Quick Assessment of Upgrade Options

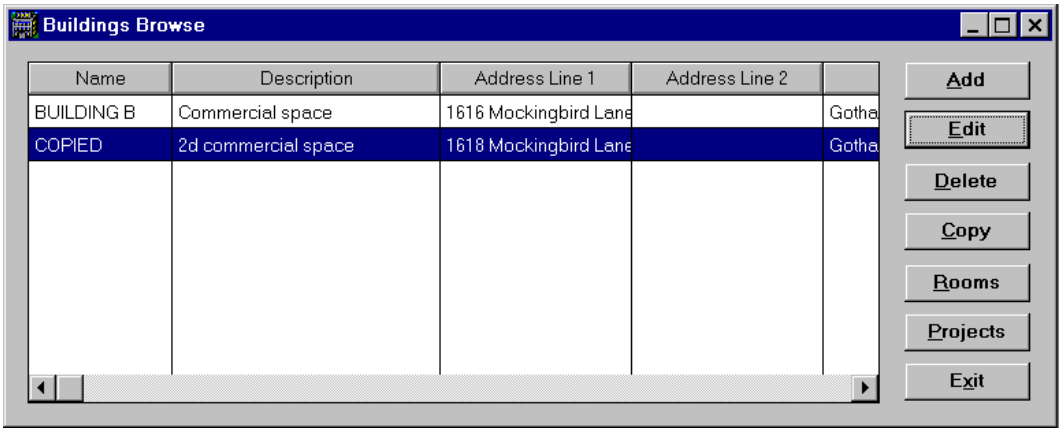
You can quickly assess upgrade options by using the Upgrade and Cost Summary tabs of the WorkZone (Figure 2-4 and). To perform this type of fast comparison, open the WorkZone by selecting File, Open, WorkZone, or click on the button on the toolbar. Enter information about the existing and upgrade fixtures and the upgrade controls, and the results will be calculated. For further information, see points 6 through 11 in section 2.2 below.

2.2 Creating Projects, Buildings, and Fixtures

To create a building with associated projects, and to define fixtures for that project, use the following procedure:

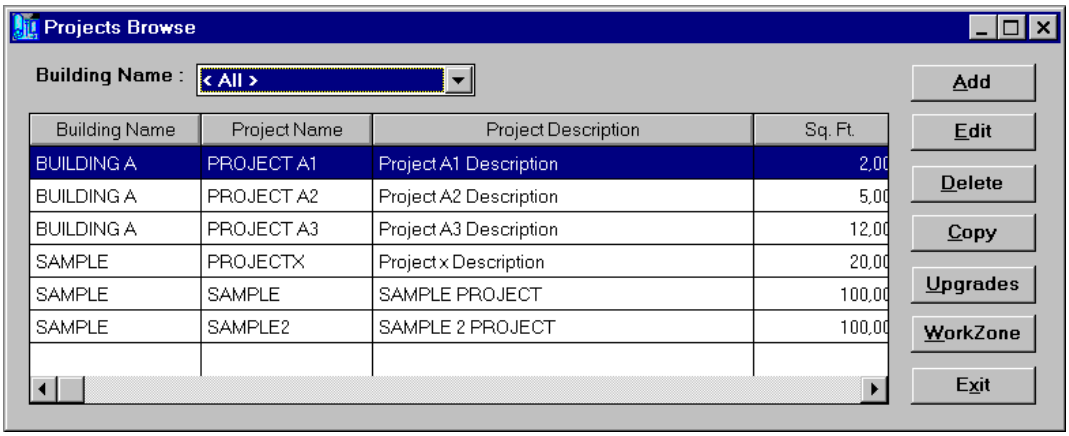
1. **Define a Building.** Select File, Open, Buildings from the menu bar to open the Buildings Browse window (Figure 2-1), *or* click on the button on the toolbar. Click on the Add button to define a new building. Type in the required building information. Click on the Save button to save the building information. The Building Add window will close, and the new building will appear on the Buildings Browse window. Click on the new building's name to highlight it.

Figure 2-1. The Buildings Browse window



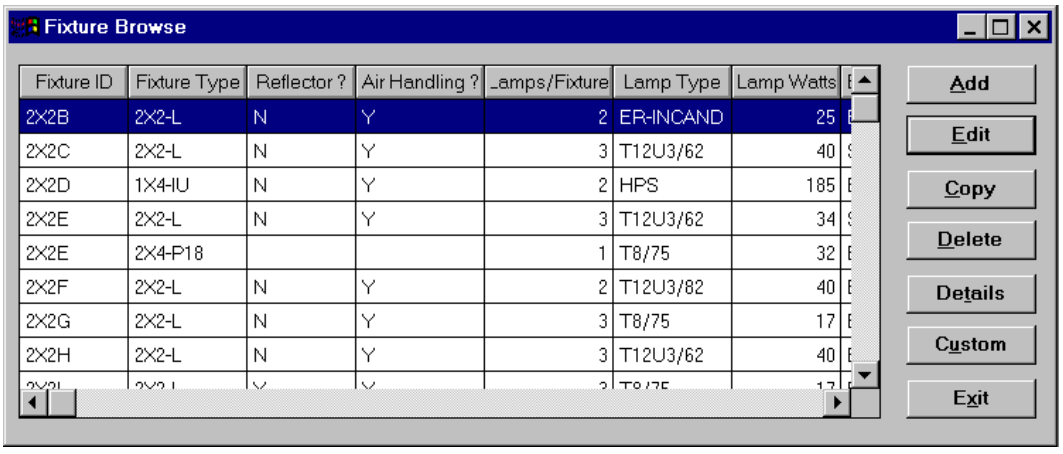
2. **Define a Project.** Click on the Projects button on the Buildings Browse window to access the Projects Browse window (Figure 2-2). The name of your new building will appear in the Building Name list box. Click on the Add button to define a project for the building. Type in the name and description of the project. Click on the Save button. The window will close. On the Projects Browse and Buildings Browse windows, click on the Exit button.

Figure 2-2. The Projects Browse window



3. **Define Fixtures.** Select File, Open, Fixtures from the menu bar to open the Fixtures Browse window (Figure 2-3), *or* click on the button on the toolbar. Select Add to define a fixture. Enter the appropriate information, using the button to view picklists when available. When all fixture components have been defined, click on the Save button. Repeat this process for all fixtures that you want to define at this time. Both existing and upgrade fixtures can be defined here, but additional fixtures can also be defined on the WorkZone. When you are finished entering fixtures via the Fixtures Browse, click on the Exit button.

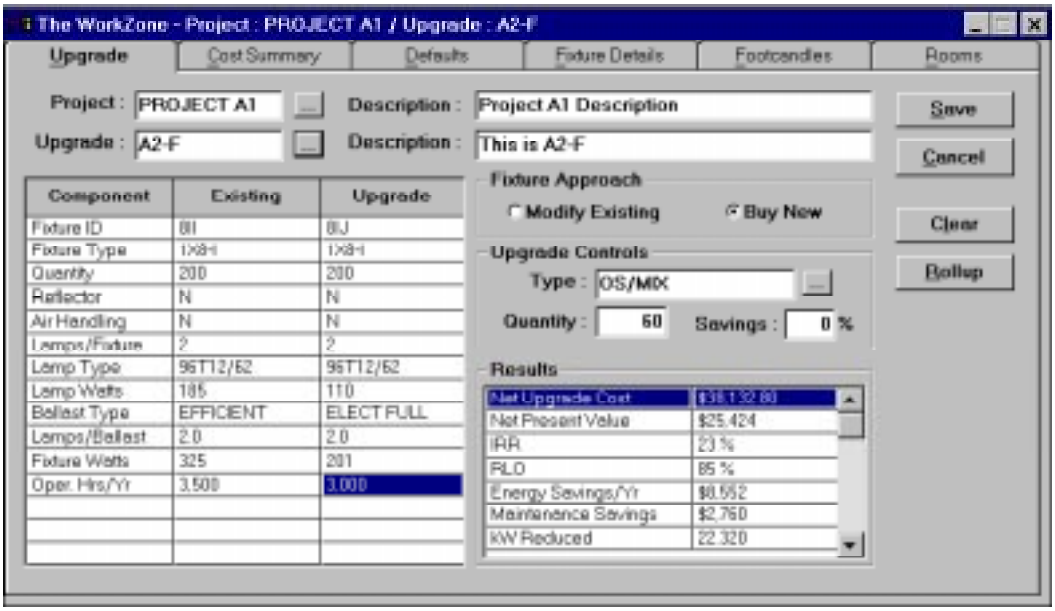
Figure 2-3. The Fixtures Browse window



4. **Access the WorkZone.** Select File, Open, WorkZone from the menu bar, *or* click on the button on the toolbar. The WorkZone will open, with the Upgrade tab on top (Figure 2-4).

You can use the Project text box to select the project you defined in point 2. To do this, click on the ... to view the project picklist. Highlight the project that you wish to modify, then click on the Select button. The picklist window will close, and the project name and description will appear on the WorkZone. Alternately, if you wish to quickly assess upgrade options, you can leave the Project text box and the Description text box empty.

Figure 2-4. The Upgrade tab of the WorkZone



5. **Define Upgrade.** Enter a name for the upgrade in the Upgrade text box. This upgrade name will be used as an identifier for this upgrade. Press [Tab] to move to the next text box. In the Description text box, enter a description of the upgrade. If you wish to use an upgrade that you have already defined, click on the ... to the right of the Upgrade text box. A picklist will appear. Click on and highlight the upgrade you wish to use, then click on the Select button. The picklist window will close, and the upgrade name, description, and fixture data will appear on the WorkZone. Press the [Tab] key to move to the next area of the window, or use the mouse cursor to click on the Fixture ID field for the existing fixture.

   If you wish to quickly assess upgrade options, you can leave the Upgrade text box and the Description text box empty.

6. **Define Existing Fixture.** Double-click on the Fixture ID field to view a drop-down list of the fixtures that were entered on the Fixtures Browse window. Highlight the appropriate fixture and click on the Select button. The picklist window will close, and all of the fixture characteristics will be filled in automatically.

You can double-click on any of the fields to alter the fixture specifications, but you will need to enter a new fixture ID for the new fixture before saving.

Use the arrow keys or press [Enter] to move down to Quantity. Type in the number of existing fixtures. Use the arrow keys to move down to Operating Hours per Year. Type in the number of hours the existing fixtures are operated yearly and press [Enter].

7. **Define Upgrade Fixture.** Double-click on the Fixture ID field to view a list of the fixtures that were entered on the Fixtures Browse window. Highlight the appropriate fixture and click on the Select button. The picklist will close, and all of the fixture characteristics will be filled in automatically.

You can double-click on any of the fields to alter the fixture specifications, but you will need to enter a new fixture ID for the new fixture before saving.

Use the arrow keys or press [Tab] to move down to Quantity. Type in the number of upgrade fixtures you plan to install. Use the arrow keys to move down to Operating Hours per Year. This field contains the value entered for the existing fixtures. If this value is not correct, type in the number of hours you expect the upgrade fixtures to be operated yearly, and press [Tab].

8. **Define the Fixture Approach.** Click on the option that reflects the fixture upgrade approach: either to modify existing fixtures, or to purchase new fixtures.

9. **Define Upgrade Controls.** On the Control Type field, click on the  button to view a picklist of available control types. Highlight the type of control that will be included in this upgrade and click on the Select button. In the Quantity text box, type in the number of controls you plan to install and press [Tab]. The Control Savings text box contains a value calculated based on the Operating Hours Per Year for the existing and upgrade fixtures. To change this value, type in a different percentage and press [Tab]. The Operating Hours Per Year for the upgrade fixture will change accordingly.

10. **Adjust Costs.** Costs for the upgrade are displayed on the Cost Summary tab (Figure 2-5). Initially, these costs are calculated using the equipment cost and labor information on the Defaults tab. To adjust the costs, you can either modify the values on the Defaults tab, as described in section 4.4, or you can change the Upgrade Cost Approach at the bottom of the Cost Summary tab to Override Calculated Values. If you override the calculated costs, you will be able to type in your own cost totals, which will then be used in calculating the results on the Upgrade tab.

11. **View Upgrade Costs and Results.** Now that all of the necessary information has been entered, ProjectKalc will automatically calculate the financial and energy results. On the WorkZone, click on the Cost Summary tab or the Upgrade tab to view these values.

12. **Save the Upgrade.** When you are satisfied with the data shown on the WorkZone, click on the Save button to save the upgrade.

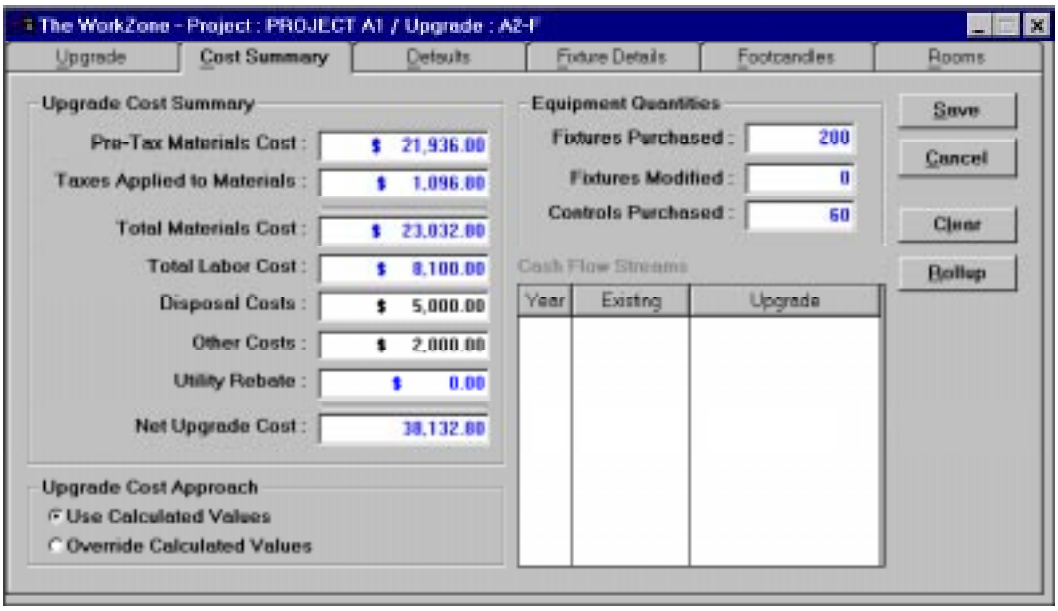
ProjectKalc also gives you the option of defining data at the room level. These features are *optional,* and are *not* used as part of ProjectKalc's analysis of the data:

1. **Define Rooms**. Select File, Open, Rooms from the menu bar to open the Rooms Browse *or* click on the  button. Select the appropriate building by clicking on the  button, then selecting a building from the drop-down list. Select Add to define a room. Enter the

appropriate fixture information, using the ... button to view a drop-down list of fixture IDs. When the room has been defined, click on the Save button to save.

2. **Assign Rooms to Upgrade**. Click on the Rooms tab of the WorkZone. A listing of all rooms in the current building which contain the existing fixture will appear on the left side of the tab. To include a room in the upgrade, highlight it, then click on the > button to add it to the Rooms Included in Upgrade. When all applicable rooms have been selected, click on the Save button.

Figure 2-5. Cost Summary tab of the WorkZone



3. Data Organization

ProjectKalc allows users to perform fixture-to-fixture comparisons which are not associated with a specific building. The software also provides the capability to develop upgrades and projects which are specific to a building. To support this approach, ProjectKalc uses the following organizational hierarchy:

Building: A building is the highest level organizational component. Within a building there may be one or more *projects*.

Project: A project is a set of changes that will take place at one time. A project is composed of one or more upgrades.

Upgrade: An upgrade, as defined at the WorkZone, is a specific change from an existing fixture type to an upgrade fixture type and can include the addition of controls. There may be more than one upgrade in a project, because there are often several types of upgrade fixtures in a building that will be upgraded at one time.

ProjectKalc does not require that you use this hierarchy when entering data, but the option is available for users who desire building-specific analysis and reports.

The ProjectKalc browse windows for buildings, projects, upgrades, fixtures, and rooms use similar buttons to provide access to specific functions, as follows:

Add: Access a window where you can add data.

Edit: Access a window where you can edit information for the item highlighted on the browse.

Delete: Delete data.

Copy: Duplicate the data for a specified item.

Cancel: Exit without saving your changes.

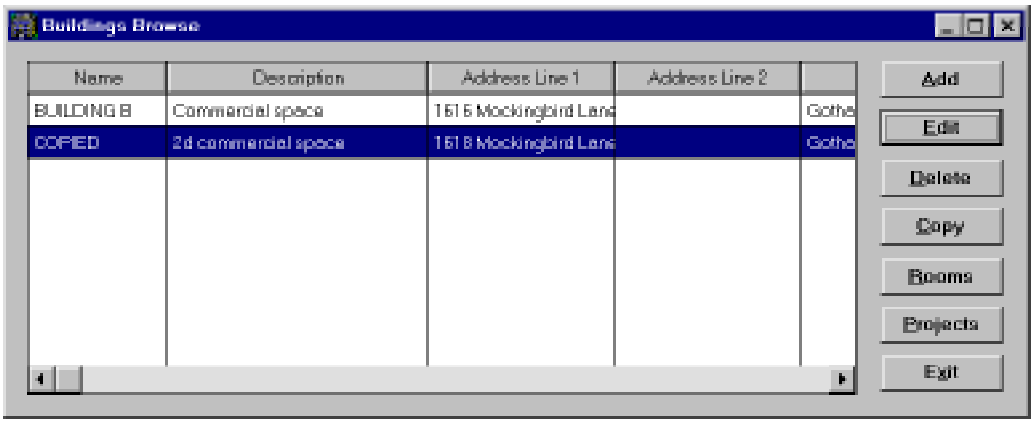
Exit: Close the browse window.

Additional buttons are explained below.

3.1 Buildings

When Buildings is selected from the File, Open menu, the Buildings Browse window will appear (Figure 3-1). Alternately, click on the  button on the toolbar.

Figure 3-1. The Buildings Browse window



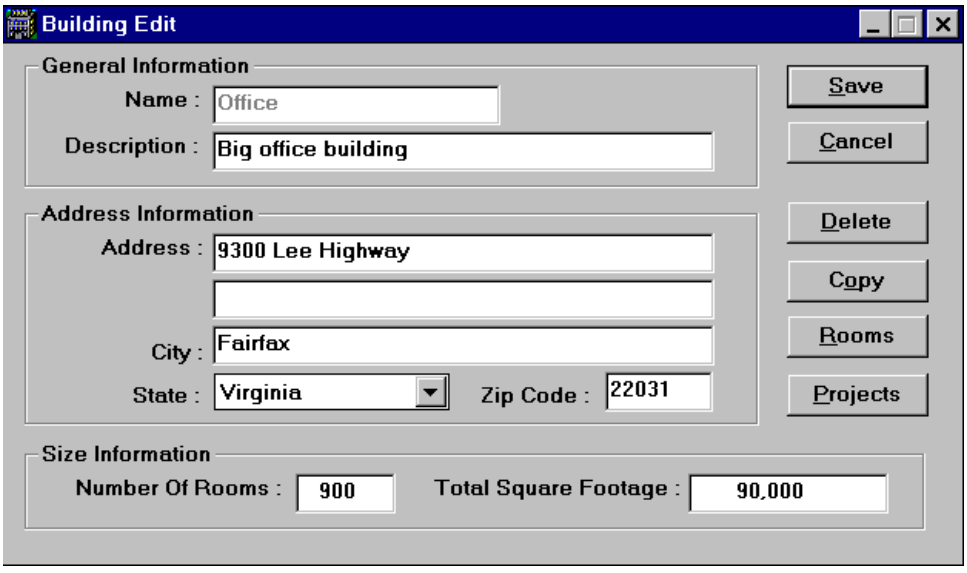
The central area of the Buildings Browse displays the building name, description, address, number of rooms, and floorspace. Because this information will not all fit in the space available, a scroll bar at the bottom of the window is provided so that you can view all of the information.

You can use the Buildings Browse window to indicate a building to edit, copy, or delete. Simply click on the building entry with the mouse to place a highlight on its data, then use one of the buttons on the left side of the window. The Rooms button opens the Rooms Browse, where you can add and edit rooms associated with the highlighted building. The Projects button opens the Projects Browse, where you can add and edit projects associated with the highlighted building.

3.1.1 Adding and Editing a Building

When you click on the Add or Edit button on the Buildings Browse, the Building Add or Building Edit window (Figure 3-2) will appear. These windows are identical, except that the Building Edit window will contain data for the building that was highlighted on the Buildings Browse. Also, on the Building Add window, the Edit, Copy, Delete, Rooms, and Projects buttons will be disabled.

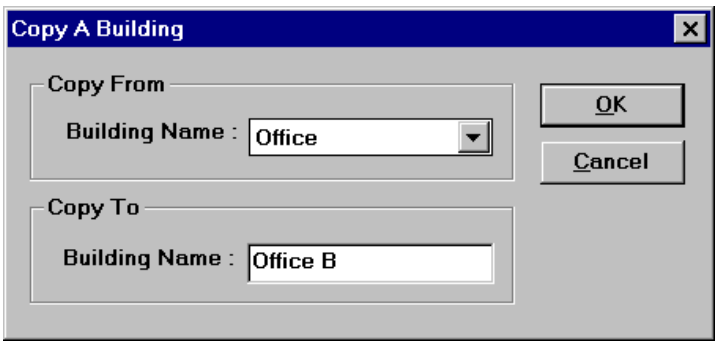
Figure 3-2. The Building Edit window



3.1.2 Copying a Building

A building's information may be copied from either the Buildings Browse or from the Building Edit window. This feature is not available from the Building Add window. When you copy a building, all of the projects and rooms associated with the building also will be copied to the new building.

Figure 3-3. The Copy a Building dialog box



To copy a building, click on the Copy button. The Copy a Building dialog box will appear (Figure 3-3). The Copy From Building Name text box has a drop-down list. Click on the button to view the list, then click on the name of the building whose information you wish to copy. In the Copy To Building Name, enter a name for new building. Click on the OK button to copy the information from the existing building to the new building.

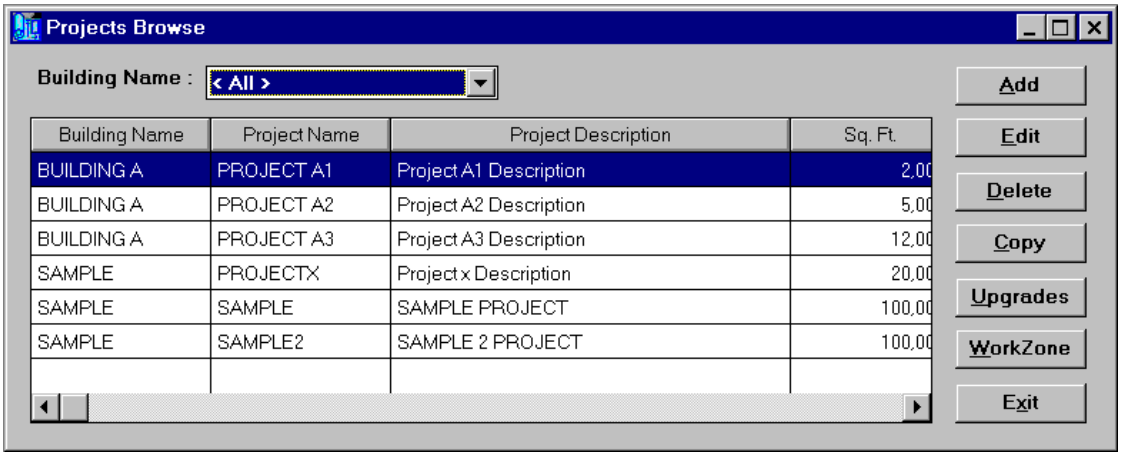
To exit the Copy A Building dialog box without copying the information, click on Cancel.

The dialog box will close, and the previous window, either the Buildings Browse or the Building Edit, will be active.

3.2 Projects

When Projects is selected from the File, Open menu, the Projects Browse window will appear (Figure 3-4). You can also open the Projects Browse by clicking on the button on the toolbar.

Figure 3-4. The Projects Browse window



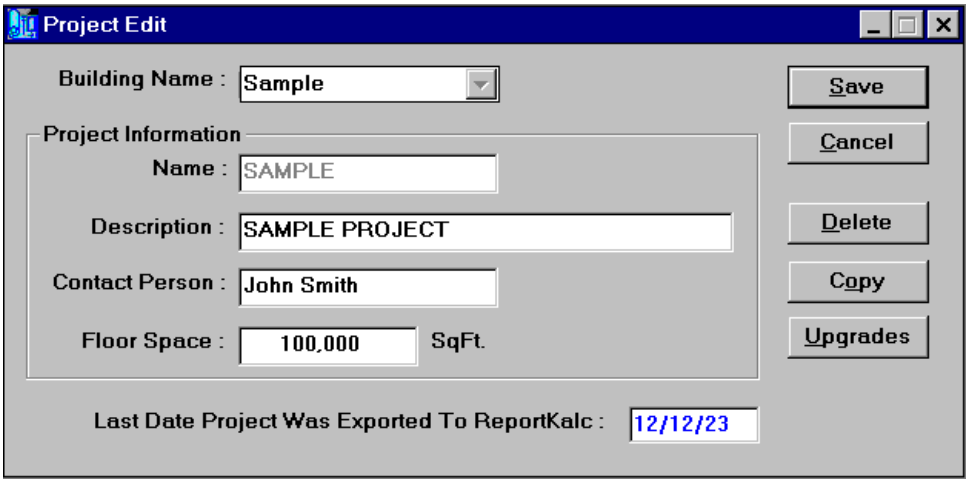
The central area of the Projects Browse displays the building name where it is located; the project name and description; square footage; and the contact person. Because not all of this information will fit in the space available, a scroll bar at the bottom of the window is provided so that you can view all of the information.

You can use the Projects Browse window to indicate a project to edit, copy, or delete, or to access upgrade information. Simply click on the project entry with the mouse to place a highlight on its data, then use one of the buttons on the left side of the window. The Upgrades button opens the Upgrades Browse window, which will initially display the upgrades that are associated with the current project, but can be expanded to show all upgrades. The WorkZone button will open the WorkZone for the project highlighted on the Projects Browse window.

3.2.1 Adding and Editing a Project

When you click on the Add or Edit button on the Projects Browse, the Project Add or Project Edit window (Figure 3-5) will appear. These windows are identical, except that the Project Edit window will contain data for the project that was highlighted on the Project Browse. Also, on the Project Add window, the Copy, Delete, and Upgrades buttons will be disabled.

Figure 3-5. The Project Edit window



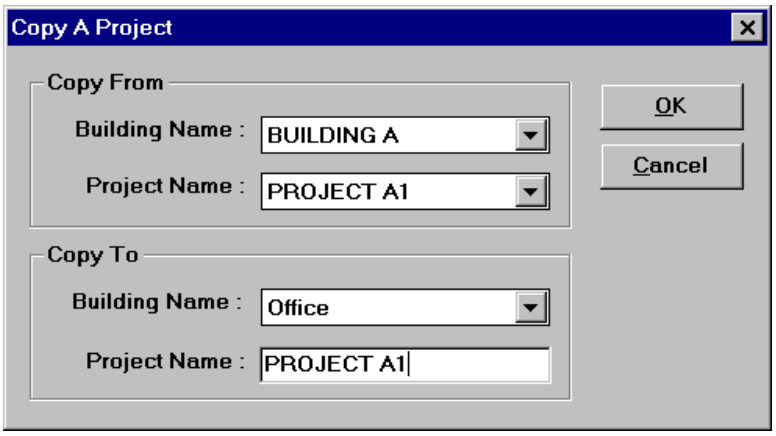
The Upgrades button opens the Upgrades Browse window, which will show information for the project that is currently highlighted on the Project Edit window. This feature is not available on the Project Add window.

3.2.2 Copying a Project

A project's information may be copied from either the Projects Browse or from the Project Edit window. Projects can be copied within the same building or to a different building.

To copy a project, click on the Copy button. The Copy a Project dialog box appears (Figure 3-6).

Figure 3-6. The Copy a Project dialog box



The Copy From Building Name text box has a drop-down list. Click on the button to view the list, then click on the name of the project whose information you wish to copy. Select the project you wish to copy from the drop-down list for the Copy From Project Name text box.

For the Copy To Building Name text box, select a building name from the drop-down list. Enter a name for the new project in the Copy To Project Name text box.

Click on the OK button to copy the information from the existing building and project to the building and new project specified in the Copy To text boxes.

To exit the Copy A Project dialog box without copying the information, click on Cancel.

The dialog box will close, and the previous window, either the Projects Browse or the Project Edit, will be active.

3.3 Upgrades

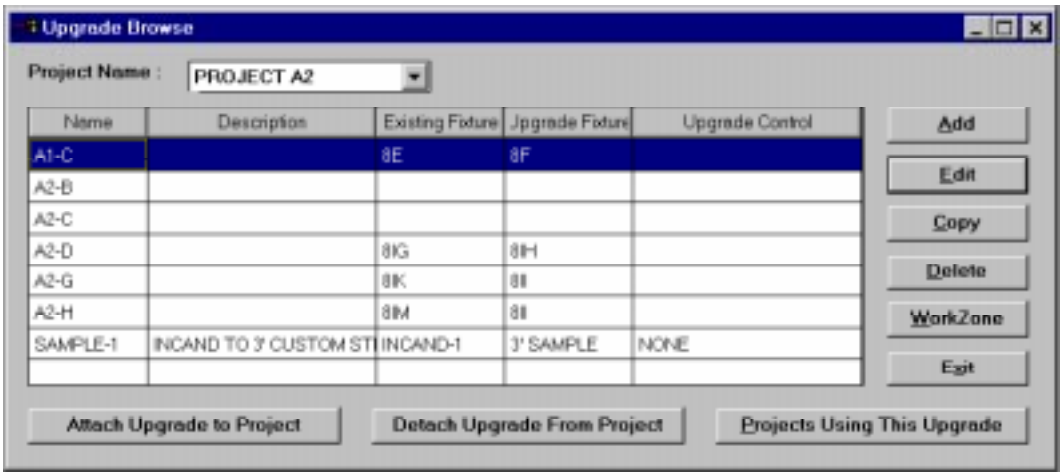
When Upgrade Pairs is selected from the File, Open menu, the Upgrades Browse window will be displayed (Figure 3-7). This window will also display when you click on the button on the toolbar, or when you click on the Upgrades button on the Projects Browse or Project Edit window. Upgrade pairs may be linked to one or more projects. For each upgrade, the listing shows the upgrade name, description, existing fixture, upgrade fixture, and upgrade control.

The Project Name list box is located at the top of the Upgrades Browse. When the project name is set to <All>, all of the upgrades that you have defined are displayed on the browse. Click on the button to select a project from the drop-down list. The browse will display the upgrades for that specific project. The WorkZone button opens the WorkZone, which will show the information for the upgrade that is currently highlighted on the Upgrades Browse.

At the bottom of the Upgrades Browse window are three buttons which provide the following functions:

Attach Upgrade to Project: After you have defined an upgrade combination, you can attach it to a project by clicking on this button.

Figure 3-7. The Upgrades Browse window



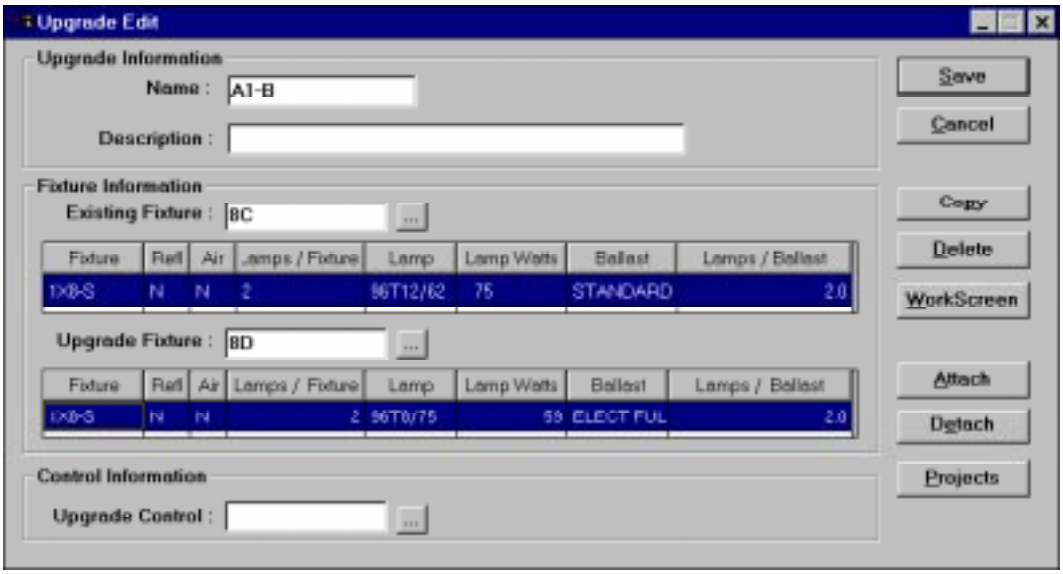
Detach Upgrade From Project: Removes the links between an upgrade and a project. The Projects Browse window includes the Upgrades button so that you can easily disconnect an upgrade from a project. You will need to detach the upgrade before you can delete a project from ProjectKalc.

Projects Using This Upgrade: Opens a window that shows the projects that are currently linked to the upgrade that is highlighted on the Upgrades Browse. This is useful if you wish to delete an upgrade and need to know where it is used, or to review your upgrade strategy for a particular upgrade type.

3.3.1 Adding and Editing an Upgrade

When you click on the Add or Edit button on the Upgrades Browse, the Upgrade Add or Upgrade Edit window (Figure 3-8) will appear.

Figure 3-8. The Upgrade Edit window

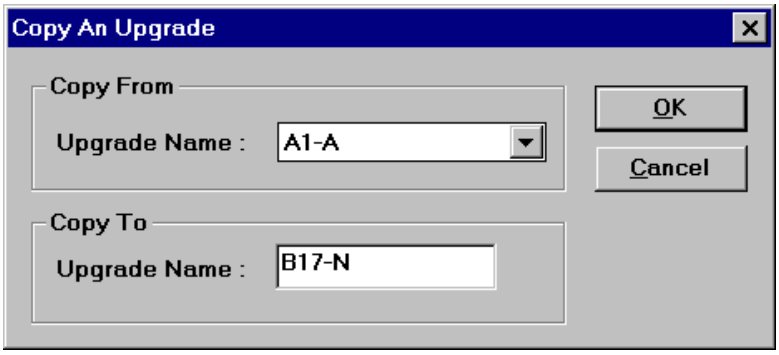


These windows are identical, except that the Upgrade Edit window will contain data for the upgrade that was highlighted on the Upgrade Browse. Also, on the Upgrade Add window, the Copy, Delete, WorkZone, Attach, Detach, and Projects buttons will be disabled. The WorkZone button opens the WorkZone. This feature is available only from the Upgrade Edit window, not from the Upgrade Add window. The Attach button associates the upgrade to a project. The Detach button removes the links between an upgrade fixture and the existing fixture. The Projects button displays the projects using this upgrade.

3.3.2 Copying an Upgrade

Upgrade information may be copied from either the Upgrades Browse or from the Upgrade Add/Edit window. To copy an upgrade, click on the Copy button. The Copy an Upgrade dialog box will appear (Figure 3-9).

Figure 3-9. The Copy an Upgrade dialog box



The Copy From Upgrade Name text box has a drop-down list. Click on the button to view the list, then click on the name of the upgrade whose information you wish to copy.

Enter a name for the new upgrade in the Copy To Upgrade Name text box.

Click on the OK button to copy the information from the existing upgrade to the new upgrade specified in the Copy To text boxes.

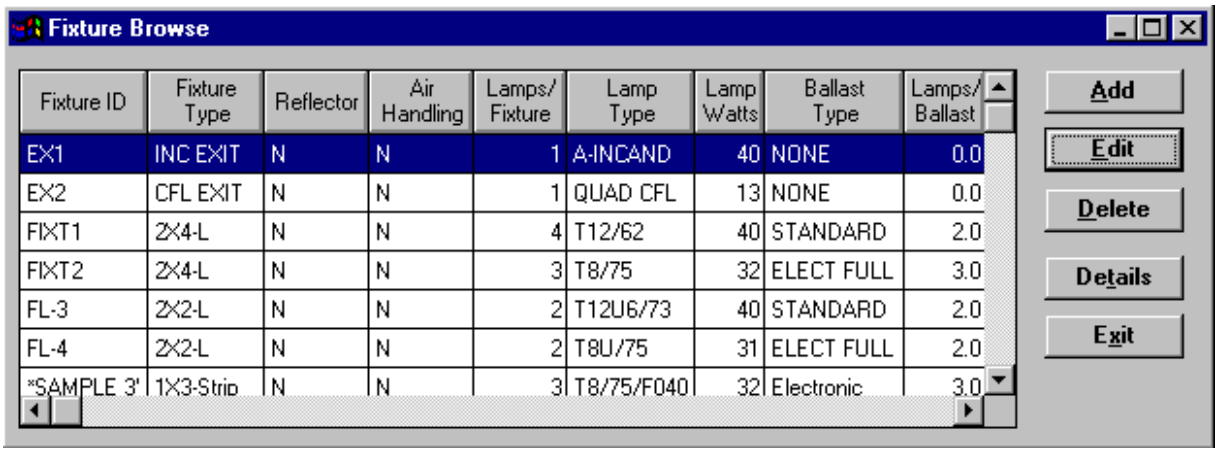
To exit the Copy an Upgrade dialog box without copying the information, click on Cancel.

The dialog box will close, and the previous window, either the Upgrades Browse or the Upgrade Edit, will appear active.

3.4 Fixtures

When Fixtures is selected from the File, Open menu, the Fixtures Browse window will appear (Figure 3-10). Alternately, you can click on the toolbar button to open the Fixtures Browse.

Figure 3-10. The Fixtures Browse window



The central area of the Fixtures Browse displays the fixture ID, fixture type, reflectors, air handling, lamps per fixture, lamp type, lamp watts, ballast type, and lamps per ballast. Because not all of this information will fit in the space available, a scroll bar at the bottom of the window is provided so that you can view all of the information.

The Fixtures Browse window allows you to define fixtures for use in any project or upgrade. Simply click on the fixture entry with the mouse to place a highlight on its data, then use one of the buttons on the left side of the window.

Any changes made to a fixture here will be applied to all upgrades containing this fixture ID. Also note that fixtures that are associated with an upgrade cannot be deleted.

Use the Details button to view the details for a fixture combination (fixture description, lamp description, and ballast description, with information about the efficacy of each device). This information is displayed only, and cannot be edited on the Details window.

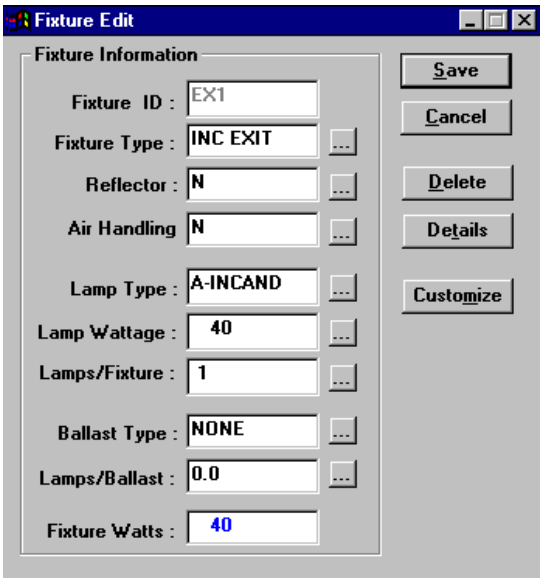
Custom fixtures are displayed here with an asterisk (*) next to the fixture ID. The process used for creating custom fixtures is presented in section 3.4.2.

3.4.1 Adding and Editing Fixtures

When you click on the Add or Edit button on the Fixtures Browse, the Fixture Add or Fixture Edit window (Figure 3-11) will appear. These windows are identical, except that the Fixture Edit window will contain data for the fixture that was highlighted on the Fixtures Browse. Also, on the Fixture Add window, the Copy, Delete, and Details buttons will be disabled.

In some cases, information will be filled automatically by the system as you describe a fixture. For example, if you are entering an incandescent fixture, Reflector and Air Handler are not applicable, so they will be filled with "N" and you will not be able to edit these fields. Fields will also be filled automatically if there is only one valid response (e.g., two lamps per ballast for an efficient ballast).

Figure 3-11. The Fixture Edit window



3.4.2 Creating Custom Fixtures

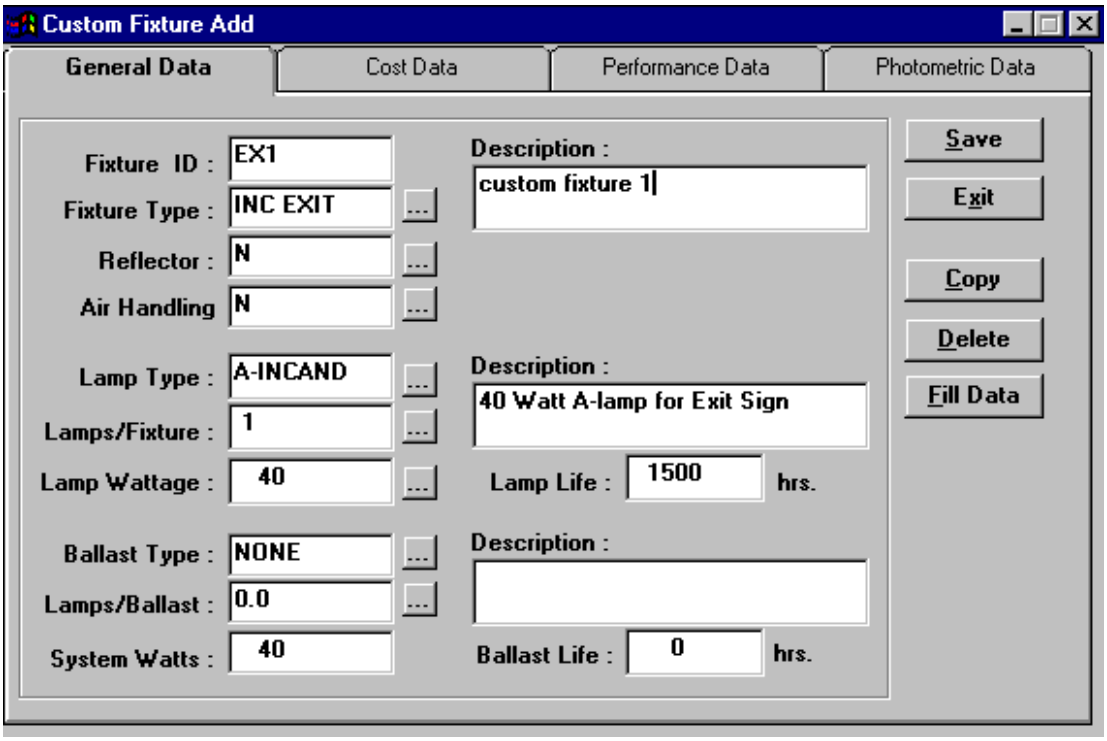
To create a custom fixture, you must first define a standard fixture. Use the standard approach for adding or editing a fixture, as described in section 3.4.1. Once a valid fixture has been defined, the Customize button on the Fixture Edit will be enabled. ProjectKalc will use the standard fixture definition as the basis for determining cost and photometric values for the custom fixture, so you should define a standard fixture that resembles the custom fixture as closely as possible. If there is no standard fixture configuration that resembles your custom fixture, just enter any valid fixture, and you will be able to modify all of the information during the customization process.

When you select Customize, a dialog window will be displayed, asking you for the type of defaults you would like to use to determine the cost and labor values for the custom fixture. You can select to use the standard ProjectKalc defaults, the system-wide defaults that you have established, or any project-specific defaults that you have established. Click on the type of defaults to use, and then click on the OK button.

The Custom Fixture window (Figure 3-12) will be displayed, with all of the applicable data filled in. The Custom Fixture window consists of four tabs: General Data, Cost Data, Performance Data, and Photometric Data. The information on the General Data and Cost Data tabs is required, and must be entered before the custom fixture can be saved. The information on the Performance Data tab is optional, and will be used to calculate the Relative Light Output (RLO) if it is entered. The information on the Photometric Data tab is also optional, and will be used in calculating footcandles if it is entered.

Once you are in the Custom Fixture window, you are free to modify the fixture components, changing the component names, descriptions, and quantities as necessary. After you have modified the components on the General Data tab, you can select the Fill Data button to update the values on the other tabs with ProjectKalc data. You will receive a message if any data could not be updated. When you are finished defining the custom fixture, select Save, and you will return to the Fixture browse. Custom fixtures are indicated with an asterisk (*) next to the Fixture ID.

Figure 3-12. Custom Fixture window

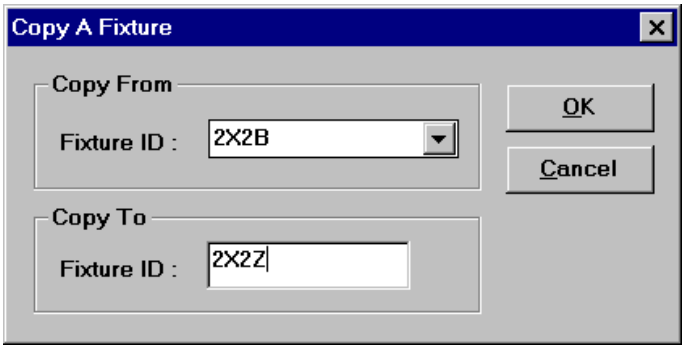


3.4.3 Copying a Fixture

Fixture information may be copied from either the Fixtures Browse or from the Fixture Edit window. This feature is not available on the Fixture Add window.

To copy a fixture, click on the Copy button. The Copy a Fixture dialog box will appear (Figure 3-13). The Copy From Fixture ID text box has a drop-down list. Click on the button to view the list, then click on the name of the upgrade whose information you wish to copy.

Figure 3-13. The Copy a Fixture dialog box



Enter a name for the new upgrade in the Copy To Fixture ID text box.

Click on the OK button to copy the information from the existing fixture to the new fixture specified in the Copy To text boxes.

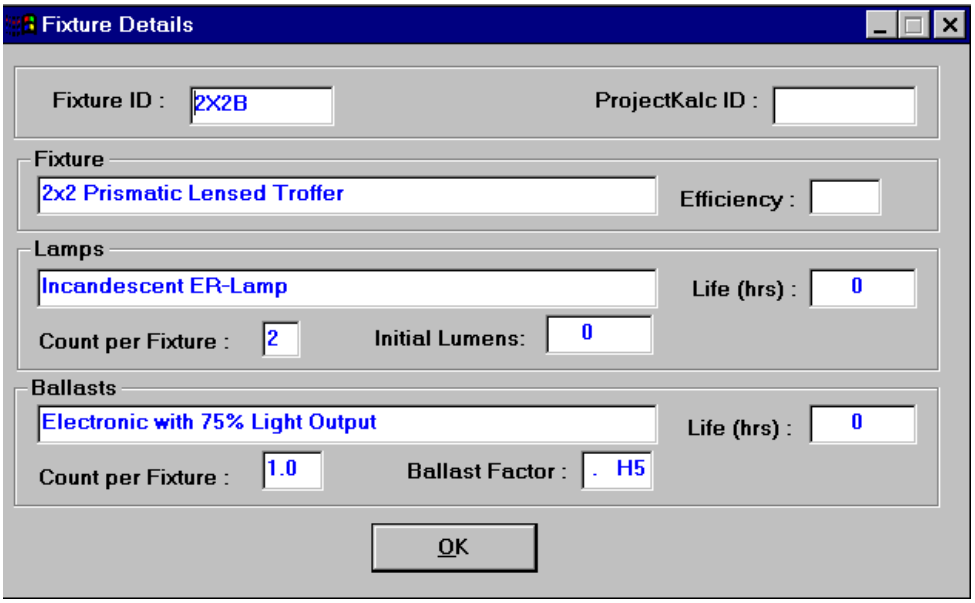
To exit the Copy an Fixture dialog box without copying the information, click on Cancel.

The dialog box will close, and the previous window, either the Fixtures Browse or the Fixture Edit, will appear active.

3.4.4 Fixture Details

The Fixture Details window shows specific information about the lamps and ballasts used for the fixtures (Figure 3-14). This information is **displayed only** and cannot be edited. It is accessed by using a button found on the Fixtures Browse window or Fixture Edit window. This feature is not available on the Fixture Add window. To close the Fixture Details window, click on the OK button.

Figure 3-14. The Fixture Details window



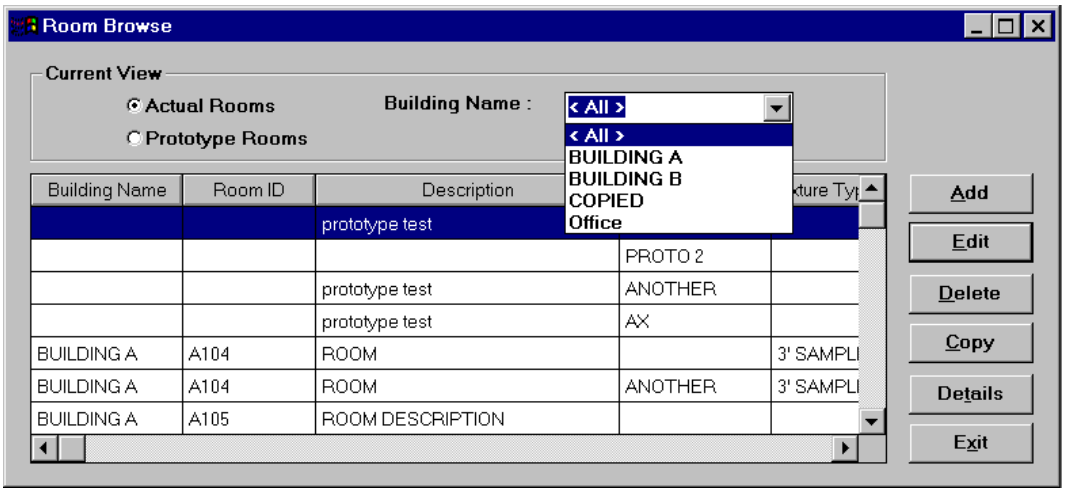
3.5 Rooms

ProjectKalc gives you the option of defining data at the room level. This feature is *optional*, and is *not* used as part of ProjectKalc's analysis of the data.

The Rooms Browse window allows you to define rooms in a specific building, including the room number, floor number, and existing fixture type. When Rooms is selected from the File menu, the Rooms Browse window will appear (Figure 3-15).

The area in the center of the Rooms Browse displays the building name, room id, description, prototype id, fixture type (1 through 3), quantity (1 through 3), room length, room width, ceiling height, fixture height, work surface height, ceiling color, wall color, floor color, fixture cleaning, and wall cleaning. Because not all of this information will fit in the space available, a scroll bar at the bottom of the window is provided so that you can view all of the information.

Figure 3-15. The Rooms Browse window



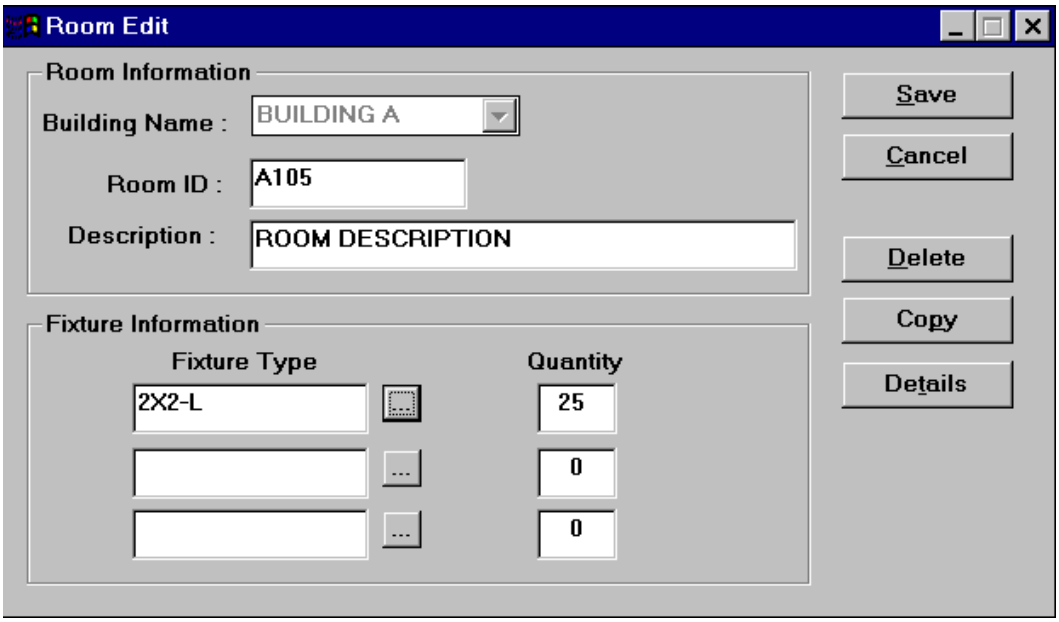
You can use the Rooms Browse window to indicate a room to edit, copy, or delete. Simply click on the room entry with the mouse to place a highlight on its data, then use one of the buttons on the left side of the window. Use the Details button to access detailed information about the dimensions, surface colors, and cleaning intervals for the room. This information is optional, but if entered, it will be used for calculating footcandle values.

Rooms that are associated with an upgrade cannot be deleted.

3.5.1 Adding and Editing Rooms

When you click on the Add or Edit button on the Rooms Browse, the Room Add or Room Edit window (Figure 3-16) will appear. These windows are identical, except that the Room Edit window will contain data for the building that was highlighted on the Rooms Browse. Also, on the Room Add , the Delete, Copy, and Details buttons are disabled.

Figure 3-16. The Room Edit window



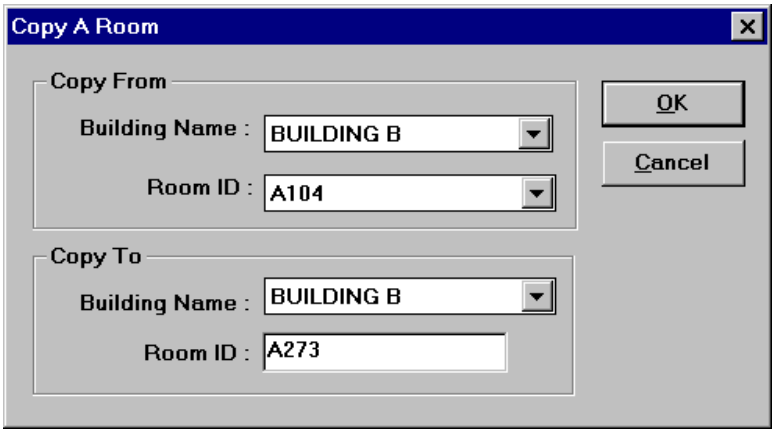
Use the Details button to access detailed information about the dimensions, surface colors, and cleaning intervals for the room. This information is optional, but if entered, it will be used for calculating footcandle values.

Rooms that are associated with an upgrade cannot be deleted.

3.5.2 Copying Rooms

A room's information may be copied from either the Rooms Browse or from the Room Edit window. This feature is not available from the Room Add window.

Figure 3-17. The Copy a Room dialog box



To copy a room, click on the Copy button. The Copy a Room dialog box will appear (Figure 3-17). The Copy From Building Name text box has a drop-down list. Click on the button to view the list, then click on the name of the building whose information you wish to copy. Select the room you wish to copy from the drop-down list for the Copy From Room Name text box.

For the Copy To Building Name text box, select a building name from the drop-down list. Enter a name for the new room in the Copy To Room Name text box.

Click on the OK button to copy the information from the existing building and room to the building and new room specified in the Copy To text boxes.

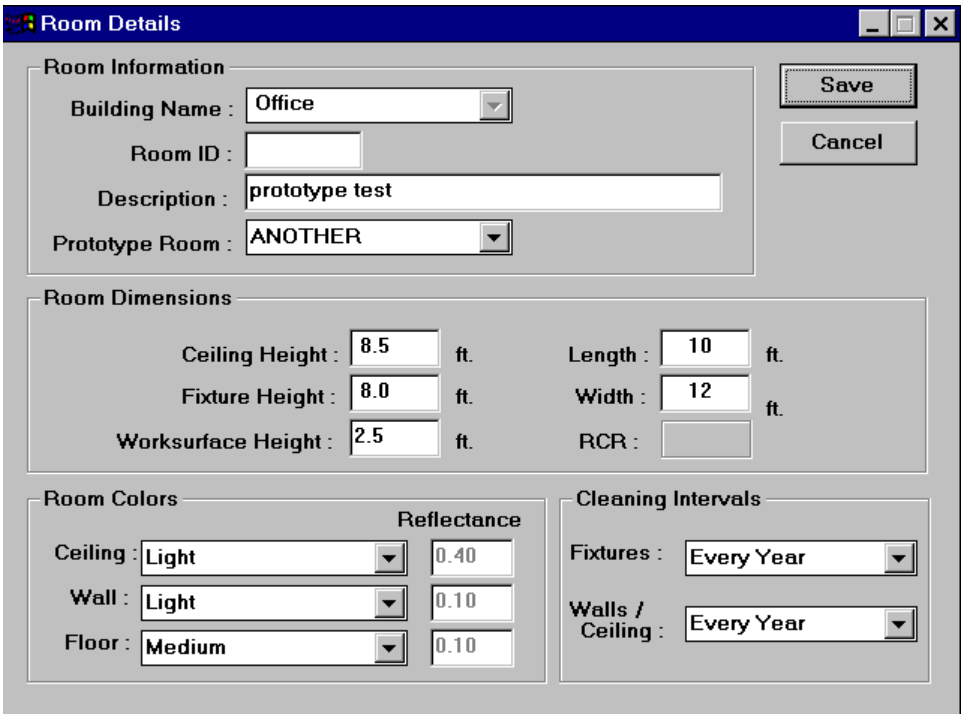
To exit the Copy A Room dialog box without copying the information, click on Cancel.

The dialog box will close, and the previous window, either the Rooms Browse or the Room Edit, will be active.

3.5.3 Room Details

The Room Details window (Figure 3-18) allows you to add and edit very detailed information about a room. This provides data for footcandle analyses that you may wish to perform. You can use the button to view drop-down lists. The Room Cavity Ratio (RCR) field is **displayed only**, and cannot be edited directly.

Figure 3-18. The Room Details window



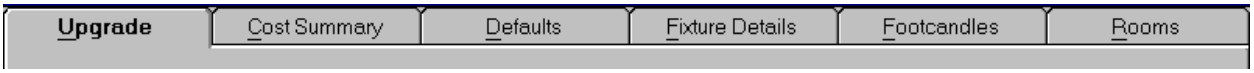
4. WorkZone

The central feature of ProjectKalc is the WorkZone, where users enter existing and upgrade fixture information and ProjectKalc calculates and displays analytical results. This window combines equipment data with calculated results in a simple, comprehensive analysis format. From the WorkZone, users can access a variety of optional windows and perform related tasks including viewing a detailed description of the existing and upgrade fixtures, assigning rooms to an upgrade, changing default cost and time data, and calculating footcandle levels in rooms.

4.1 Structure

The WorkZone is divided into tabs: Upgrade, Cost Summary, Defaults, Fixture Details, Footcandles, and Rooms (Figure 4-1).

Figure 4-1. The WorkZone tabs



Select each tab by clicking on it with the mouse cursor. The selected tab will appear on top of the other tabs, and you will be able to enter and modify data on it.

The buttons on the tabs shown on the WorkZone have the following functions:

Save: When you click on the Save button on the WorkZone, ProjectKalc will check several items before saving. ProjectKalc will first check the validity of the data on the WorkZone. If you have changed the definition of a fixture or created a new fixture, you will have to give the fixture a new fixture ID, so that it can be saved with the upgrade. If you were editing an upgrade and made any changes to the characteristics, such as changing the existing or upgrade fixture or controls, you will receive a message that another upgrade exists with the same name and different parameters. At this time you can select to replace the existing upgrade definition with your changes, or give the current upgrade a new name so your previous version of the upgrade remains intact.

Exit: Exit the WorkZone without saving the values you have entered.

Clear: Clears out all of the data currently on all tabs of the WorkZone. You will be asked to confirm that you want to clear the WorkZone.

Rollup: Allows you to view the cumulative results of the upgrades in a project. To use this feature, select a project in the Project list box, then click on the Rollup button. All of the upgrades in the current project will be displayed in a window. Click on the upgrades that you want to include in the rollup.

When you are ready to calculate the results for the selected upgrades, click on the Calculate button. ProjectKalc will take a few moments to calculate the project-level information, then will display the financial and energy results for all of the selected upgrades on the window. When finished viewing the project rollup results, click on the print button to print a copy, or click on the Exit button to close the Rollup window.

4.2 Upgrade Tab

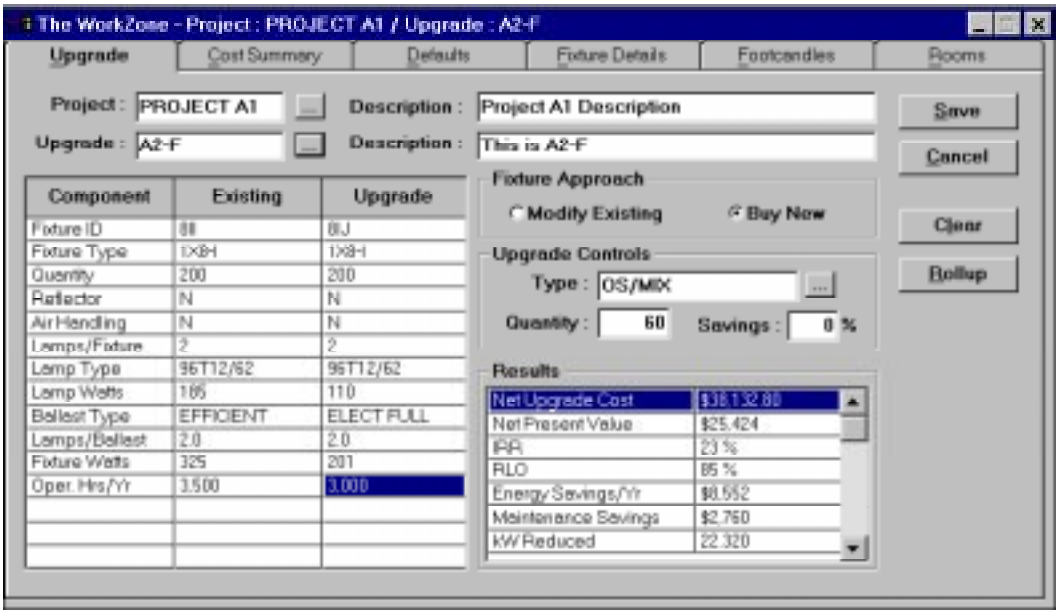
The Upgrade tab of the WorkZone contains the information used to identify the upgrade.

The Project list box contains the project name. This can be typed in, or you can click on the ... button. If you click on the ... button, a picklist of all projects will be displayed. The project picklist shows the project names, descriptions, square footage, contact information, and the building associated with the project. If you select a project name from the picklist, associated fixture and control data will be filled in automatically and displayed on the WorkZone.

The Upgrade list box contains the upgrade name. This can be typed in, or you can click on the ... button. If you click on the ... button, a picklist of all previously defined upgrades will be displayed. The upgrade picklist shows the upgrade names, descriptions, and fixture information. If you select an upgrade from the picklist, all of the associated fixture and control data will be filled in automatically and displayed on the WorkZone.

The project and upgrade descriptions are optional and used for your information only.

Figure 4-2. The Upgrade tab of the WorkZone



4.2.1 Existing and Upgrade Fixture Information

The next area on the Upgrade tab is used to describe existing and upgrade fixtures. If an upgrade has been selected, the associated fixture information will be displayed. Otherwise, this area will be blank. To enter fixture information in the Fixture Quantity and Operating Hours cells, click on the cell and type in the value. On other cells, you can either click on the cell and type in the value, or use the mouse to double-click on the cell and open a picklist of valid options.

If you change any characteristics of a previously defined fixture, the fixture ID will be removed to indicate that this is now a different fixture. You must give this fixture definition a unique fixture ID in order to save it with the upgrade. The characteristics of an existing fixture can only be changed by using the Fixtures Browse. As you change fixture components, ProjectKalc will

validate the combinations to ensure that they are acceptable. In some cases, changing one fixture component will cause other component values to be removed. For example, if the lamp type is changed from a fluorescent to an incandescent lamp, the ballast type will be removed because incandescent lamps do not have a ballast.

4.2.2 Fixture Approach

The Fixture Approach indicates how the upgrade is being executed, either by modifying existing fixtures, or by purchasing and installing new fixtures. Click on the appropriate radio button. In some cases, the Fixture Approach is predetermined by the existing and upgrade fixtures that you have selected. For example, if the existing fixture is incandescent and the upgrade fixture is fluorescent, the Fixture Approach will be set to Buy New.

4.2.3 Upgrade Controls

This area on the WorkZone is used to describe the controls included in the upgrade. Type the control type in the Type text box, or click on the ... button to access a list of options. Highlight the appropriate option, then press [Tab] to move to the next text box. Type in the quantity of controls to be installed.

The value in the Savings text box indicates the reduction in operating hours expected to result from the implementation of controls. This number is linked to the difference between the Operating Hours per Year for the existing and upgrade fixtures. The Control Savings is automatically filled by ProjectKalc, based on the operating hour difference.

If you modify the Control Savings, the upgrade operating hours will change accordingly. For example, if you enter existing operating hours of 5000 and upgrade operating hours of 3500. ProjectKalc displays control savings of 30 percent. If you change control savings to 40 percent. ProjectKalc changes upgrade operating hours to 3000.

4.2.4 Upgrade Results

The last section of the Upgrade tab displays the results of the upgrade. These values are calculated automatically and cannot be edited. The results are updated automatically whenever any relevant information is modified (e.g., fixture type, fixture quantity, or default costs). Use the scroll bar to view the list of results.

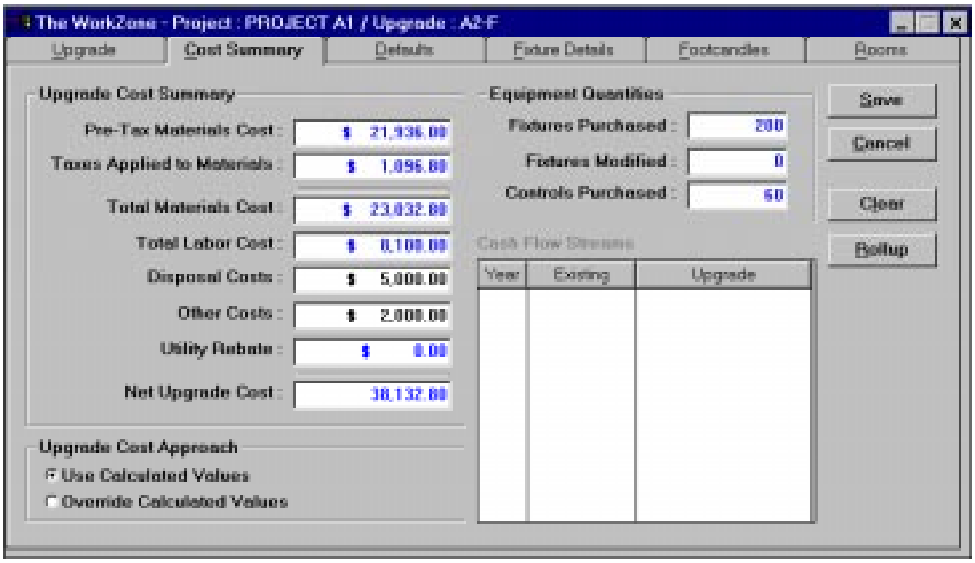
4.3 Cost Summary Tab

The Cost Summary tab of the WorkZone contains the costs associated with the upgrade. Initially, these costs are calculated using the equipment cost and labor information on the Defaults tab. To adjust the costs, you can either modify the values on the Defaults tab, as described in section 4.4, or you can change the Upgrade Cost Approach at the bottom of the Cost Summary tab to Override Calculated Values. If you override the calculated costs, you will be able to type in your own cost totals, which will then be used in calculating the results on the Upgrade tab.

4.3.1 Upgrade Cost Approach

To change the component costs or labor times used in calculating the pre-tax material cost, taxes applied to materials, total material cost, total labor cost, and utility rebate, click on the radio button beside Override Calculated Values. Enter the values that you prefer. ProjectKalc will automatically calculate the net upgrade cost based on the values entered.

Figure 4-3. The Cost Summary tab of the WorkZone



4.3.2 Equipment Quantities

The Equipment Quantities area shows the number of fixtures purchased, the number of fixtures modified, and controls purchased in order to upgrade. This information is displayed only, and cannot be edited on the Cost Summary tab. To modify this data, change the quantities and approach on the Upgrades tab.

4.3.3 Cash Flow Streams

The Cash Flow Streams are displayed but cannot be edited. This area shows annual costs for the existing and upgraded fixtures, including maintenance, energy, and first costs. Note that these cost streams are averaged so that only one sign shift occurs in the IRR calculation.

4.4 Defaults Tab

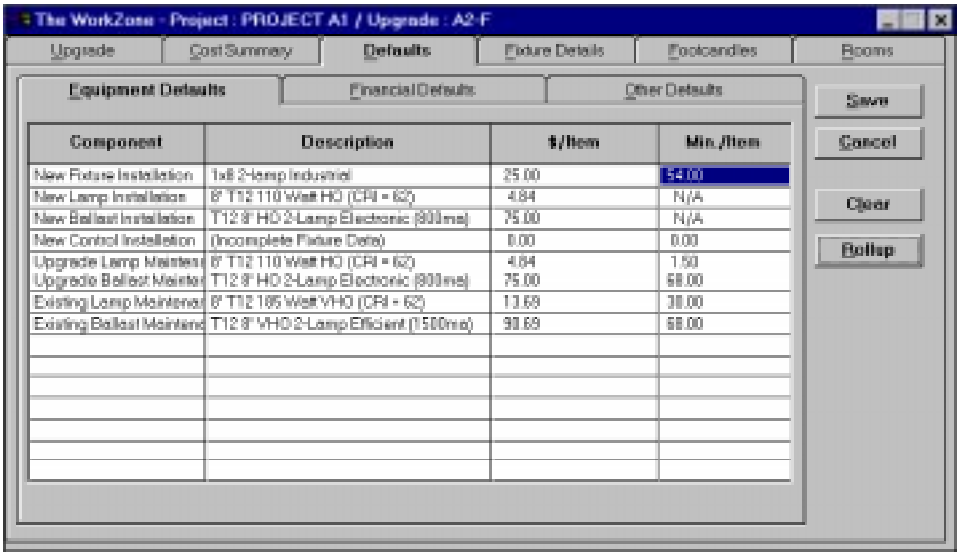
The Defaults tab on the WorkZone provides access to *upgrade-specific* default values for equipment costs and installation times, financial items, and other items. The information entered on the Defaults tab directly affects the calculations on the Cost Summary and Upgrade tabs.

Defaults used for all projects, or for a specific project, can be modified via the Defaults window, which is accessed through the Defaults menu option. These defaults are used for analyses *unless* defaults are modified *for a specific upgrade*, which is done on the WorkZone, on the Defaults tab.

ProjectKalc holds a variety of default data for calculating the results shown on the Upgrade tab of the WorkZone: 1. Equipment; 2. Financial; and 3. Other.

Each of these costs are represented by a tab within the Defaults tab. You can edit the defaults for the upgrade by double-clicking on the default to be changed. Although these data are intended to represent typical values for relatively large projects, significant variation occurs in practice for a variety of reasons. By modifying defaults to match your historical experience, ProjectKalc will become a more accurate tool for assessing upgrade options.

Figure 4-4. The Equipment Defaults tab on the Defaults Tab of the WorkZone



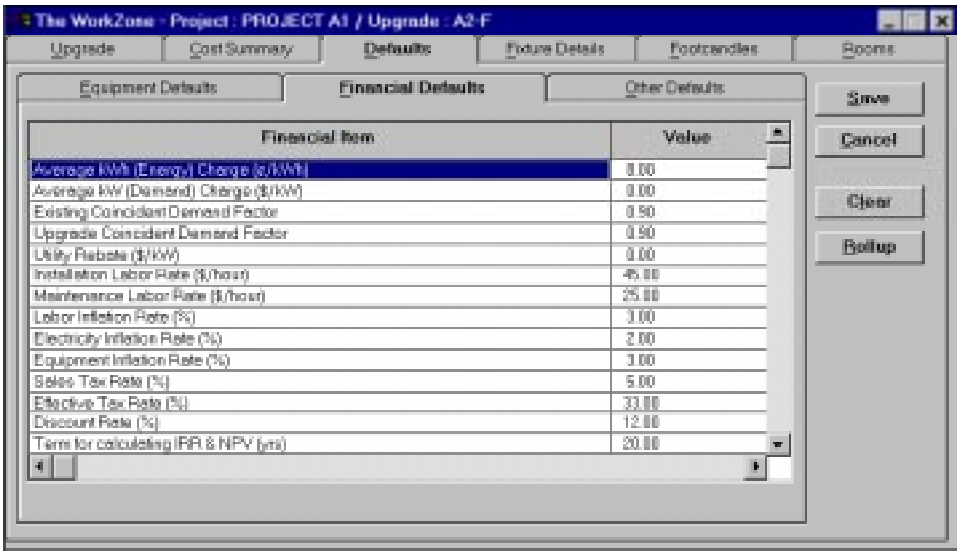
4.4.1 Equipment Defaults

The Equipment Defaults tab (Figure 4-4) shows all of the equipment cost and labor values that are used to calculate the financial results of the upgrade. This includes the initial cost and installation labor values for all of the upgrade components, as well as the maintenance values for both the existing and upgrade lamps and ballasts. In some cases, a value may not be applicable. For example, the installation labor for a new fixture assumes that the lamps and ballasts are already part of the fixture. Therefore, separate installation times for the upgrade lamps and ballasts are not necessary. In all cases, it will be important for you to work with a lighting industry professional to refine cost estimates provided by ProjectKalc. The defaults option will allow you to calibrate the default data to fit the characteristics of your projects.

4.4.2 Financial Defaults

Financial data defaults, which are shown on the Financial Defaults tab (Figure 4-5) are used by ProjectKalc to calculate the variety of costs provided during analysis and to inflate or tax-adjust costs used in the IRR and NPV analysis. Most of the financial data used by ProjectKalc will vary by region, building, or project. By modifying defaults to match your local conditions and experience, ProjectKalc will become a more accurate tool for assessing upgrade options.

Figure 4-5. The Financial Defaults tab of the Defaults tab on the WorkZone



Many of the ProjectKalc financial data defaults will be adequate for basic comparisons between upgrades. Utility data is particularly variable across the U.S., however, so defaults should be modified to match your applicable demand and use rates.

Effective tax rate refers to the combined federal, state, and/or local income tax rate. This is used to provide more realistic post-tax economic analysis in ProjectKalc.

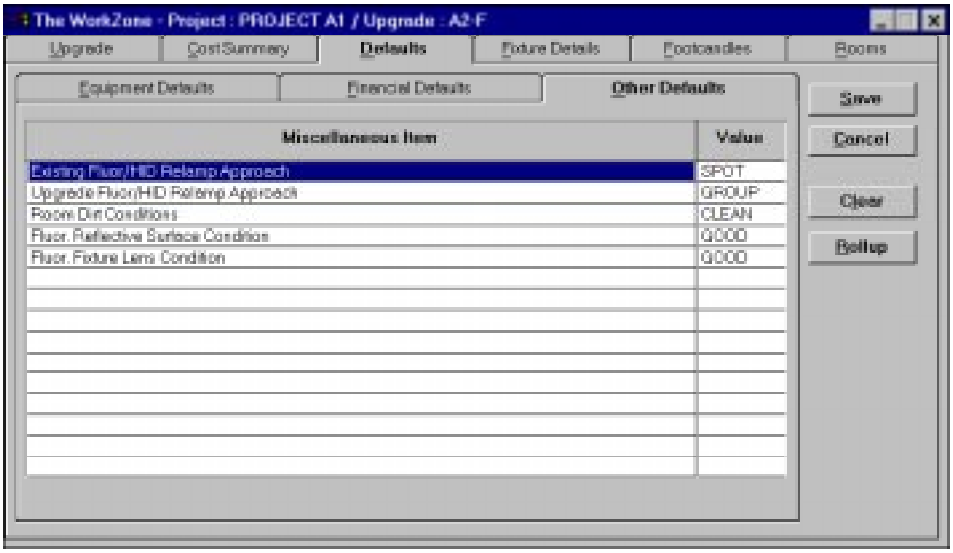
4.4.3 Other Defaults

Defaults other than equipment and financial defaults are shown on the Other Defaults tab (Figure 4-6). Relamping Approach is used to determine how much labor is attributed to fixture relamping and, in some cases, the lamp lumen depreciation (LLD) used in %RLO and footcandle calculations. With a spot relamping approach, lamps are assumed to be relamped on a one-by-one basis at end of rated life. If group relamping is specified, full-sized fluorescent and HID lamps are replaced as a group at 70 percent of rated life. Since labor time for group relamping is significantly less than for spot relamping, maintenance costs are reduced over the life of the system. Note that no other lamp types will be group relamped in ProjectKalc. Each of these ProjectKalc defaults can be modified to improve the usefulness of upgrade analyses.

Default settings for the Room Dirt Conditions are currently only used to adjust the room surface dirt depreciation (RSDD) factors used in %RLO and footcandle calculations. For luminaire dirt depreciation (LDD), ProjectKalc assumes clean conditions similar to those found in most office spaces.

Condition of Fluorescent Reflective Surfaces is used to determine whether a modest (0.96 for fair, 0.92 for poor) luminaire surface depreciation (LSD) factor will be applied in %RLO and footcandle calculations for existing and modified fixtures. Note that this factor will only be applied to fluorescent lenses, grid, and parabolic fixtures, which ProjectKalc assumes to have troffers. It will not be applied to existing or upgrade fixtures with reflectors or new fixtures since the existing troffer condition will not influence upgrade performance.

Figure 4-6. The Other Defaults tab of the Defaults tab on the WorkZone

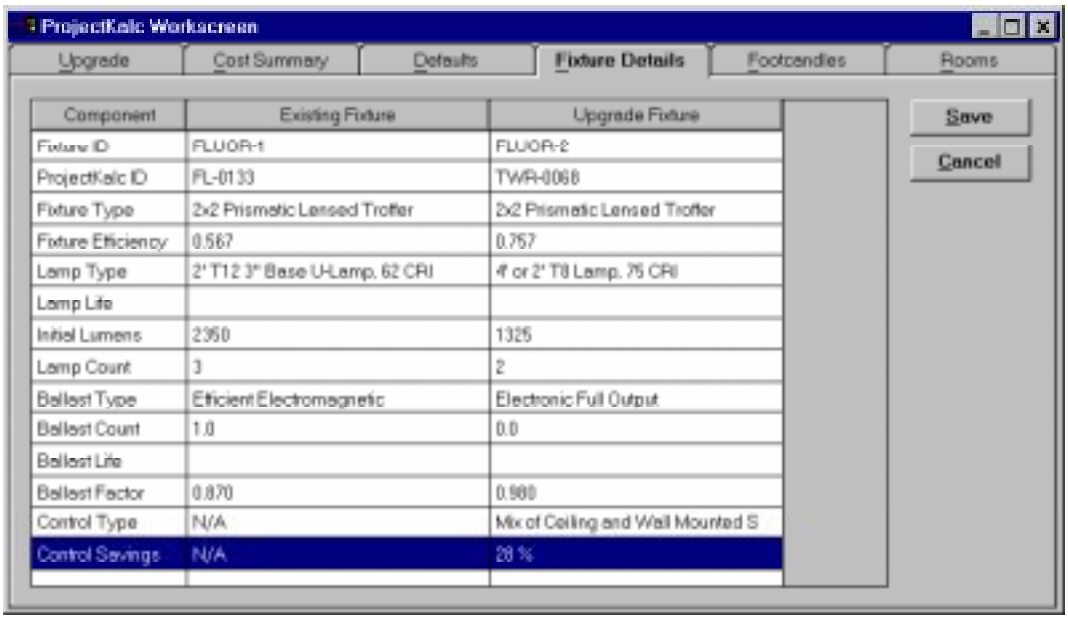


Condition of Fluorescent Fixture Lenses is used to determine whether a modest (0.975) luminaire surface depreciation (LSD) factor will be applied in %RLO and footcandle calculations. This factor will only be applied to existing lenses and wraparound fixtures where the default lens condition is set to poor. If lens condition is poor and these fixture types are modified, ProjectKalc will add the cost and labor for new lenses.

4.5 Fixture Details Tab

The Fixture Details tab on the WorkZone (Figure 4-7) displays detailed descriptions of the existing and upgrade components for a fixture. The information on this window is displayed only, and cannot be edited.

Figure 4-7. The Fixture Details tab of the WorkZone



4.6 Footcandles Tab

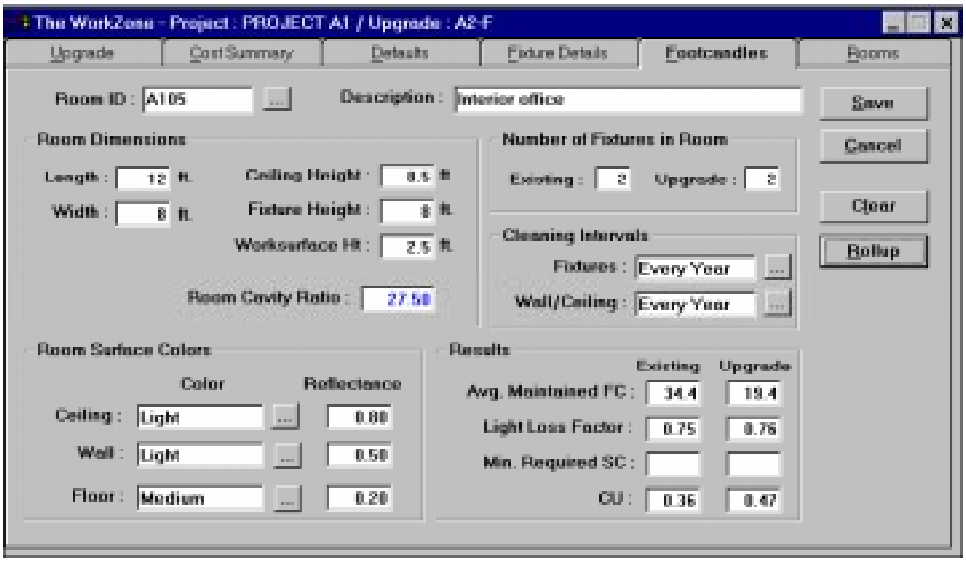
The Footcandles tab on the WorkZone (Figure 4-8) gives you the option of calculating the lighting requirements of a room, accounting for details such as the room's dimensions, cleaning intervals, and room surface colors. This is useful if you wish to see the results from a variety of upgrade options to ensure that the resulting upgrade produces the lighting and savings you require.

This feature is *optional*, and is *not* used as part of ProjectKalc's analysis of the data.

If you have defined a room for which you wish to calculate footcandles, click on the ... button beside the Room ID text box, then select the room from a drop-down list. If detailed information was entered for the selected room during the survey, this information will be displayed on the window. Alternately, you can enter information as necessary. When sufficient information has been entered, the calculated room cavity ratio, footcandles, light loss factors, and coefficient of utilization will be displayed.

It is not necessary to enter a room ID on this tab. You can type in the dimensions, colors, and cleaning schedules for a sample room, and the results will be calculated. Please not that the room information entered on the Footcandles tab *will not* be saved with the other WorkZone data.

Figure 4-8. The Footcandles tab of the WorkZone



4.7 Rooms Tab

The Rooms tab (Figure 4-9) is used to select rooms to be associated with the upgrade. In order for rooms to be assigned to an upgrade, the room information must first be entered on the Rooms Browse window. The rooms must also be located in the same building as the current project.

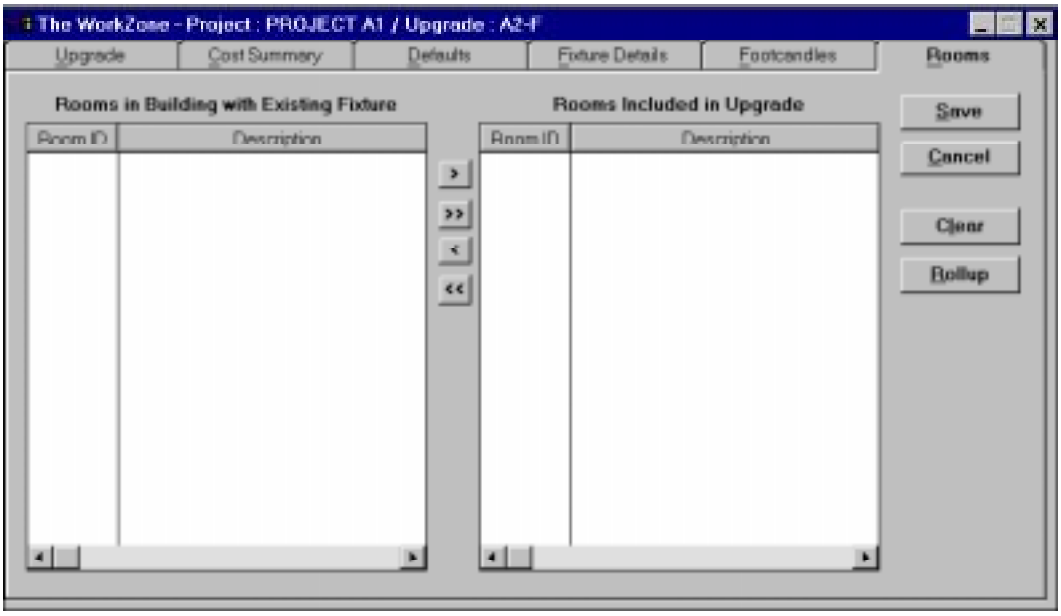
This feature is *optional*, and is *not* used as part of ProjectKalc's analysis of the data.

On the left side of the Rooms Tab, the surveyed rooms in the current building which contain the existing folder are listed. This listing indicates the room ID and room description. Highlight

each room to be associated with the upgrade, then click on the [>] button. The fixture information will be copied to the Rooms Included In Upgrade area. Repeat until all of the rooms you need have been copied. To copy all of the rooms, use the [>>] button.

To remove the association between a room and an upgrade, click on the [<] button. The room will be removed from the list of rooms included in the upgrade. Click on the [<<] to clear out the entire list of rooms associated with the upgrade.

Figure 4-9. The Rooms tab of the WorkZone



5. Defaults

ProjectKalc maintains a database of equipment cost and installation labor time data, but also allows users to modify these values to more closely represent costs for their specific region or jobs.

To modify defaults used for *all* projects, or for a specific project, use the Defaults window, which is accessed through the Defaults menu option.

To modify defaults for a specific project or upgrade, you can also use the Defaults tab on the WorkZone.

5.1 The Defaults Menu

The Defaults menu has two options:

View/Edit Default Settings: Access the Default Selection window, where you can view and edit the default settings for all projects, or for specific projects.

The selections you make affect the options that are available on the subsequent areas of the window.

Print Default Settings: Allows you to print a copy of the settings you have established in your copy of ProjectKalc.

To modify the default values by using the Default Selection window, use the following procedure:

1. Select the Defaults menu, View/Edit Default Settings option. The Default Selection window (Figure 5-1) will appear.

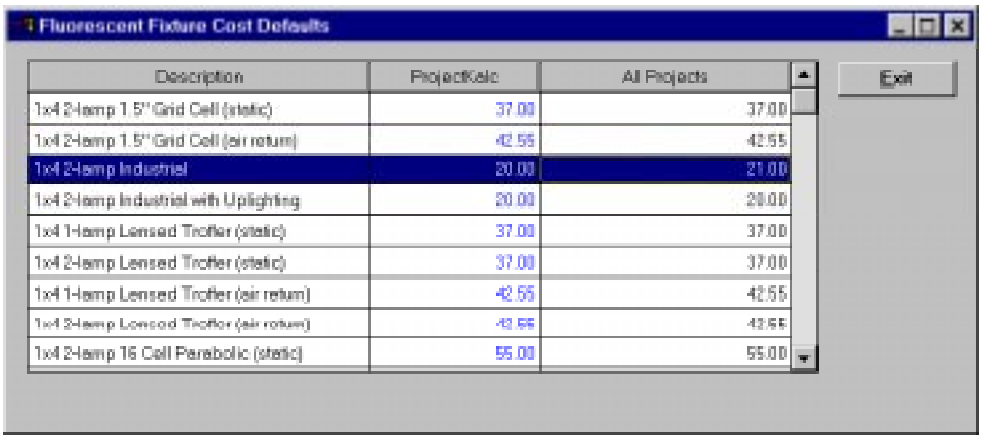
Figure 5-1. The Default Selection window

When you enter the Default Selection window, the OK button is dimmed. In order to specify the type of default, you will need to click on the radio buttons that indicate the type of default you wish to modify until the OK button is active.

2. Initially, the Default View is set to All Projects, which allows you to change default values for every project in your copy of ProjectKalc. If you wish to change the defaults for a specific project, click on the radio button beside that option, then click on the button to select a building and project name.
3. In the Default Category area, click on the radio button for the type of default that you wish to modify. The radio buttons in the next area (Equipment Types and/or Default Type) will be active or disabled depending on the radio button you click. In each active area, click on the radio button for the type of default you wish to modify. When the OK button is active, click on it.
4. The default modification window will appear (Figure 5-2). The title of the window will indicate the type of default you are modifying (Control Cost Defaults, for example). The default modification window has columns that describe the default, show the ProjectKalc default value and the values currently used for all projects. If you are editing values for a specific project, these values will appear in a separate column.

   You can enter new values in the project value column by double-clicking on the appropriate cell, then typing the new value. If you decide to use the ProjectKalc value after changing the default value, enter the value shown in the ProjectKalc default value column.

Figure 5-2. The default modification window



If you have questions regarding the costing and default approach in ProjectKalc, contact the Green Lights Technical Support Hotline at the numbers listed in section 7.4.

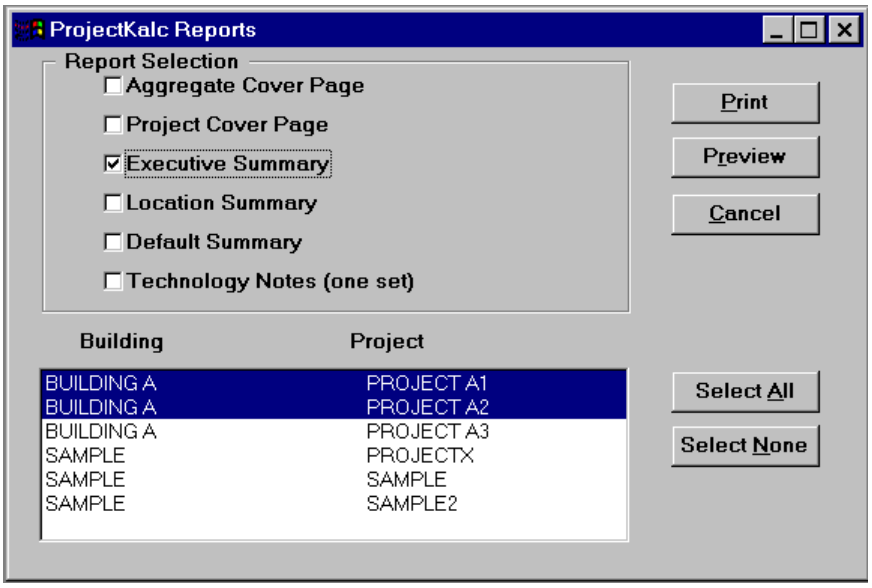
Note that you can also enter project-specific and upgrade specific defaults by using the Defaults tab on the WorkZone. For a description of the Defaults tab, see section 4.4.

6. ProjectKalc Reports

ProjectKalc produces a number of reports ranging from summary level data to complete project reports. The options are available from the Reports menu:

Report Selection The Report Selection option causes the ProjectKalc Reports dialog box to appear, where you can select report types and the buildings and projects to appear on the reports (Figure 6-1).

Figure 6-1. The ProjectKalc Reports dialog box



The Aggregate Cover Page option will remain dimmed unless you select multiple buildings and projects. This is described below.

- The Aggregate Cover Page and Project Cover Page options on the ProjectKalc Reports window are not reports, but cover sheets which can be used to group the other reports into a single presentation. The cover sheet includes the building name, project name, all upgrades included in the project, the date and time printed, a listing of reports selected by the user, and any notes made by the user.
- The Executive Summary report includes general, energy, financial, and pollution prevented information for a project.
- The Location Summary report includes information on the fixtures and controls included in each upgrade for a project, and the rooms where the equipment is found.

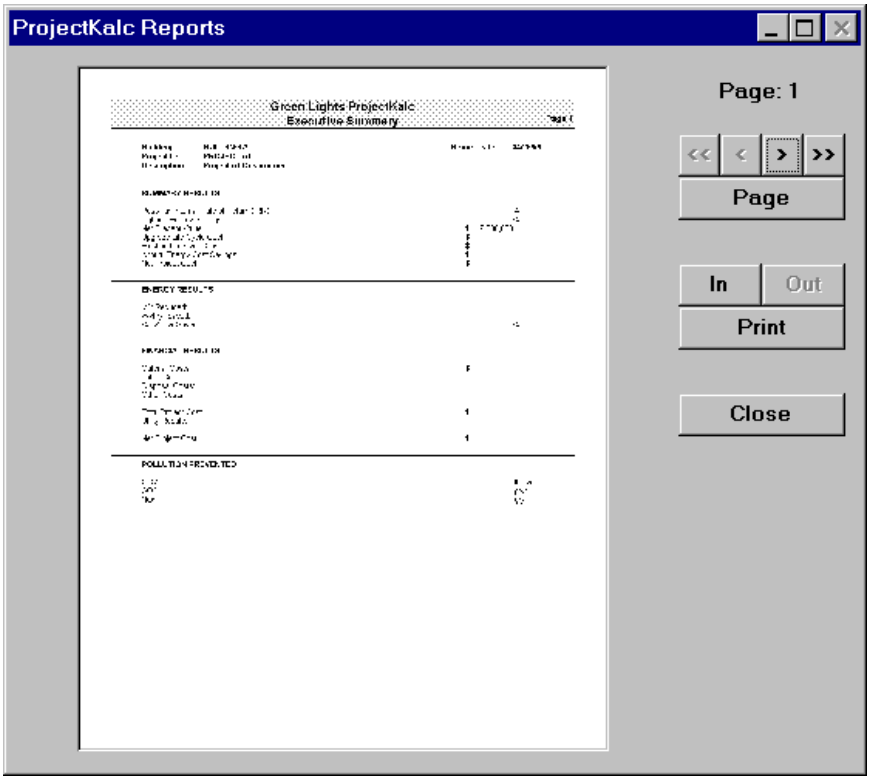
Survey Forms Prints the Fixture Survey Form, the Room Survey Form, and the Detailed Room Survey Form used for surveying projects and rooms.

ProjectKalc allows for the entry of survey data for those who would like to apply upgrades to specific buildings and rooms.

Technology Notes This is a static report which includes background information on the approach used in ProjectKalc for evaluating lighting technologies.

The interface used for the reports allows you to preview the report before printing (Figure 6-2). You can click on the Print button on the preview window to print the report shown, or, in the case of the report options accessed through the Report Selection option, you can click on the Cancel button, then click on the Print button on the ProjectKalc Reports window.

Figure 6-2. The Report Preview window



7. If Problems Occur

Although ProjectKalc has been extensively tested by the developers, it has not been tested for every possible situation and type of equipment. There may be problems related to the data or your computer configuration. The following sections describe some common problems and what to do about them.

7.1 Data Problems

If ProjectKalc has trouble accepting data or recognizing data that has been entered, or it is producing illogical or inconsistent data in the reports, this is an indication that there is a problem with the indexing of the databases.

To correct this problem, perform the following procedure:

1. Go to the Utilities menu and select Re-Index Databases.
2. From the dialog box, select the databases that you wish to re-index.
3. Click in the check box at the bottom of the dialog box to remove deleted records. This helps to compact the databases and allows them to perform more efficiently.
4. Click on OK to re-index the databases.
5. Exit ProjectKalc normally, then enter the program again.

If this procedure does not correct the problem, check for other possible problems. For additional help, contact Technical Assistance.

7.2 Printing Problems

There are many possible reasons that your reports may not print, including:

- Disconnected power cords, network cords, and cables between your computer and the printer;
- The printer may be turned off, out of paper or toner, jammed with paper, or switched to off-line; or
- Your computer may be sending your print job to a different printer.

If the system is not sending data to the printer, or the printouts contain unusual characters, check to be sure that the system is configured properly for your printer. Use the Windows Program Manager's on-line help system for additional information, or consult a Windows user's manual.

If you are only getting partial reports when you print, your printer may need a larger print buffer for your print job. To correct this problem, you must either add memory to your printer or use print spooler software. Contact your computer support staff for further assistance.

If you and your computer support staff person cannot resolve the printing problem, contact Technical Assistance.

7.3 What To Do Before Seeking Technical Assistance

If a serious error occurs that causes ProjectKalc to stop working, a dialog box will appear on the screen. If you receive an error dialog box, please perform the following steps:

1. Write down what you were doing when the error occurred, such as the menu you were using, the window or dialog box you had activated, or the report you were trying to save.
2. Write down the entire error message that is displayed on your computer screen.
3. Select Cancel. Try to exit ProjectKalc. If you cannot exit normally, restart your computer by pressing [Ctrl+Alt+Delete].
4. Enter Windows again, and try entering ProjectKalc.
5. If you can enter ProjectKalc, select Utilities, Re-Index Database.
6. Repeat the steps that led to the error. If the error message does not appear again, the re-indexing corrected the problem.
7. If the error message is displayed again, call for technical assistance.

7.4 Technical Assistance

Technical assistance is available to users of ProjectKalc who have problems installing or using the software. Technical assistance can be reached, toll-free, by calling:

Green Lights Software Support Hotline

1-(888) STAR-YES

[1-(888) 782-7937]

FAX: (703) 691-3353